DECEMBER '57

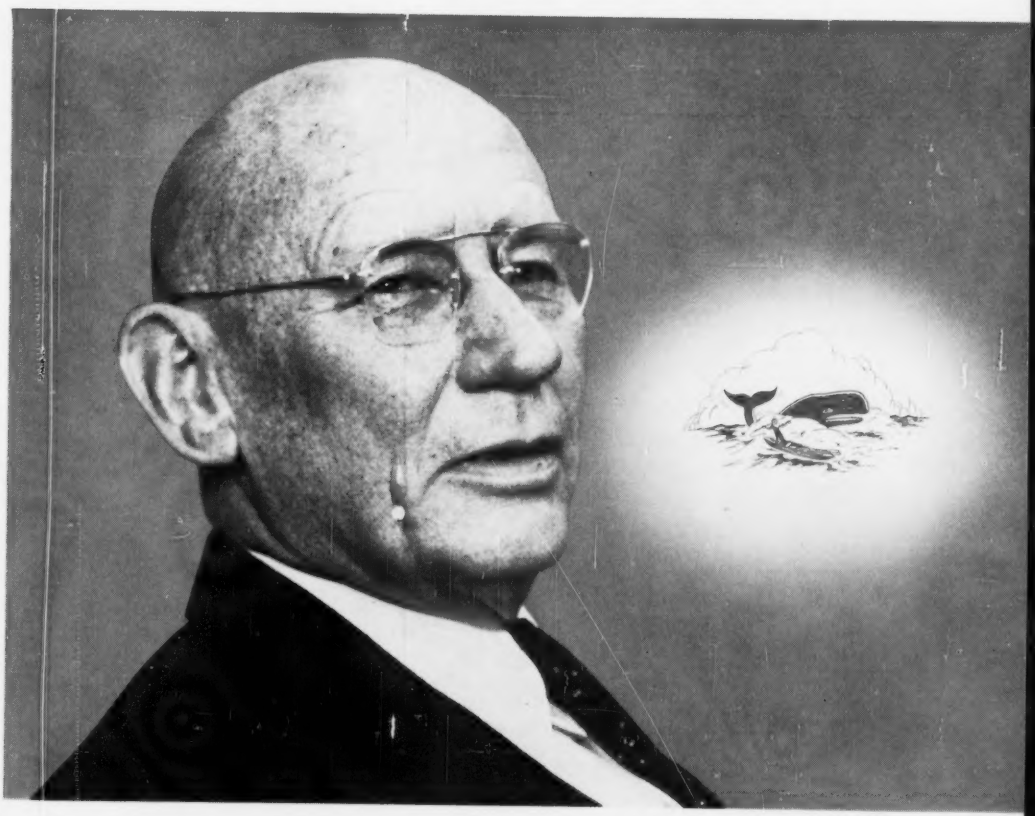
MODERN TEXTILES MAGAZINE

Specializing in Man-Made Fibers and Blends since 1925

FIBERS

FABRICS

FINISHES



Berkshire Hathaway's SEABURY STANTON gets set to harpoon a bigger share of textile profits – *Story page 33*

THIS MONTH'S SPECIAL FEATURES

Tests to improve weaving

Man-made fibers use rises fourfold

New yarns widen fabric horizons

How one machinery maker created demand

AND MANY MORE HELPFUL ARTICLES AND EXCLUSIVE REPORTS

When you reduce waste you increase profits!

Use the right cone surface for your operation

...SONOCO has it!

The surface of a cone can have *everything* to do with winding a perfect package, or effecting delivery of yarn. Since profit depends on trouble-free production, it is essential that you use a cone with the proper surface.

In 58 years of continuous research, SONOCO has perfected a wide range of surfaces from coarse, velvet and polished to scored and grooved—in different weights, tapers and nose finishes. Each cone surface was developed by SONOCO for a specific purpose. SONOCO research can benefit you!

Let a SONOCO technical expert help you get the greatest efficiency in winding, packaging and delivery of your yarns . . . remember, when you reduce waste you increase profits!

Typical of SONOCO research is the 3°30′, Unitex Surface Cone shown here. Its smooth surface is banded with a flock finish to prevent slippage in primary winding and permits free delivery to the last turn. Perfect for winding silk, rayon, nylon or other filament yarns.

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PAPER CARRIERS
REG. U.S. PAT. OFF.

SONOCO PRODUCTS COMPANY

913 MAIN OFFICE — HARTSVILLE, S. C.

MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J.
LONGVIEW, TEXAS • PHILADELPHIA, PA. • LOS ANGELES, CAL.
GRANBY, QUEBEC • BRANTFORD, ONT. • MEXICO, D. F.

EXPERIENCE *is the Greatest Teacher*

Gaston County Dyeing Machine Company was founded in 1921 by R. F. Craig, well known textile executive and mill owner. Mr. Craig served as president of the company until his death in 1946.

The affairs of the company are now under the direction of the second and third generations of the Craig family. H. M. Craig, son of the founder, has been affiliated with the firm during its entire 36 year history. R. P. Craig, another son of the founder, has been connected with the firm for 15 years, and H. M. Craig, Jr., has completed 5 years of service. Important members of the executive staff are George Hacker with 20 years of service and his son, Gordon Hacker, with 10 years of service with the company.

A considerable number of production employees have been with the company since its beginning and many others have service records of 25 years and longer. Until the recent expansion program required the employment of additional skilled workers, the average service record of all employees was about 15 years. Most of the new employees are skilled men with previous experience in other plants doing work of a similar nature.

There is no Substitute for Experience

GASTON COUNTY DYEING MACHINE CO.

STANLEY, NORTH CAROLINA • ESTABLISHED 1921

DESIGNERS AND BUILDERS OF DYEING, BLEACHING, EXTRACTING AND DRYING MACHINES

Stainless Steel Fabricators — Process Tanks and Pipe

45759 unique yarn ideas of caprolan®†

• And they're all different! And they're filament yarns! If you take nine deniers of Caprolan heavy yarn and seven of the most promising bulking processes and make combinations of singles, two- and three-ply yarns, you come up with some 45,759 completely new yarns with potential applications in upholstery, carpets, drapery fabrics, outerwear and many more. And, in industrial fabrics, the performance values of texturized heavy yarns hardly have been explored!

When the inherent advantages of looped, curled, crimped or coiled filament yarns are combined, and then multiplied in turn by the special values of Caprolan, the challenge to fabric designers and textile engineers becomes especially exhilarating. Yarns of entirely new character, the economies inherent in yarns which bloom many times their original size, the improvements in fabric construction made possible by these yarns, the uniquely different surface effects obtainable, plus all of the special performance values of Caprolan itself offer creative opportunities to the textile technologist that are limited only by his own ingenuity and imagination. For a discussion of how texturized heavy yarns of Caprolan fit into your particular end use, call or write:

caprolan®... the performance fiber... by Allied Chemical

†Allied Chemical's polyamide fiber.

Fiber Sales and Service Allied Chemical *National Aniline Division*
261 Madison Avenue, New York City 16, N. Y.

MODERN
TEXTILES MAGAZINE

December, 1957 Vol. 38, No. 12

Modern Textiles Magazine
Established 1925

* * *

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303 Fifth Ave., New York 16, N. Y.
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American Association for Textile Technoloy, Inc. ..... 100 W. 55th St., New York
Silk and Rayon Printers and Dyers Ass'n of America, Inc. ..... 1450 Broadway, New York
Synthetic Organic Chemical Manufacturers Association ..... 41 F. 42nd St., New York
Textile Distributors Institute, Inc. ..... 469 Seventh Ave., New York
American Rayon Institute ..... 350 Fifth Avenue, New York

Departments

Why Fiber Use Ebbs

End use markets served by textiles have expanded 26% since 1948 but fiber consumption has been held back by losses to paper and plastic materials in traditional textile outlets, according to Dr. M. K. Horne, chief economist of the National Cotton Council. Dr. Horne said domestic mill consumption of cotton would be 1.6 million bales higher except for losses to foreign textile competition and to non-textile materials in cotton's own end uses.

Draper Shuttleless Loom Being Tested

A new shuttleless loom now undergoing tests at an undisclosed mill will be available to industry within a year and possibly sooner, Draper Corp. announced recently. The loom also is scheduled to be tried out on another type of operation at a second mill in the near future. Draper did not state what kind of fabrics and constructions the loom would be used to make in its early mill uses.

Charch Gets Award

Dr. W. Hale Charch, director of pioneering research in Du Pont's Textile Fibers Research Division, has been awarded Columbia University's Charles Frederick Chandler medal in recognition of his outstanding achievements in development of moistureproof cellophane and synthetic fibers.

Dr. Charch, in delivering the Chandler Lecture following the award, said textile chemists can now "synthesize fibers for specific end use requirements, and predict the physical and chemical properties of fabrics that the fiber can be woven into."

"Automatic" Wash-Wear Clothes

Du Pont recently demonstrated that new "wash-and-wear" garments can be washed and dried with no ironing needed, in home laundry equipment in about an hour. Scheduled for delivery to stores early in 1958, these "automatic wash-and-wear" fashions are made possible by the properties of Du Pont's fibers plus new methods of garment construction, according to the company. In this construction, stitching, trim and other findings are used that withstand the rigorous mechanical action of home washing and tumble drying.

Introduced last April by a single suit manufacturer, it is estimated that for Spring and Summer of 1958 there will be 37 manufacturers offering a wide range of men's apparel of the automatic wash-and-wear variety. It was reported that most 1958 brand name dryers are being equipped with a specific setting for handling such garments. By 1961, Du Pont estimates that 60% or more of a predicted 17,000,000 home dryers in use will be especially engineered to handle these garments made of fabrics containing high percentages of Du Pont's Dacron polyester fiber and Orlon acrylic fiber.

New Polyethylene Resin

Commercial production and research progress on Marlex 50 polyethylene indicates that textile manufacturers will be using millions of pounds of this new synthetic fiber within the next year or so, according to Phillips Chemical Co., developer of the resin. Among the first consumer items using the new fiber will be upholstery and decorative fabrics, rope and seat covers. Advantages cited for the fiber are: can be washed or dry cleaned; can be produced in a full range of solution-dyed colors; serves as protective cloth or as a filter medium; maintains strength; and can be metalized by conventional techniques. *For further information, write the editors.*

For drapery and upholstery fabrics... the

"BIG YARN"

look with **KOLORBON***

heavy-denier solution-dyed rayon fiber

Kolorbon—The Fiber of a "Thousand and One" Hues			
COLORS	8 DENIER BRIGHT LUSTRE	15 DENIER BRIGHT LUSTRE	15 DENIER DULL LUSTRE
Royal Blue	✓	✓	
Larkspur Blue	✓		✓
Capri Blue	✓		✓
Turquoise	✓		✓
Sea Green	✓		✓
Mint Green	✓		✓
Kelly Green	✓		✓
Bitter Green	✓	✓	
Lemon Peel	✓		✓
Gold	✓		✓
Melon	✓		✓
Tangerine	✓	✓	
Chinese Red	✓	✓	
Champagne	✓		✓
Sandalwood	✓		✓
Nutria	✓		✓
Coco	✓		✓
Sable	✓	✓	
Café Brown	✓	✓	
Midnight Black	✓	✓	
Charcoal	✓		✓
Cloud Grey	✓		✓

The "Big Yarn" look is the news this year in home furnishings—and KOLORBON is making it!

This heavy-denier, solution-dyed rayon fiber brings the freshness and excitement of the hand loomed look to drapery and upholstery fabrics. So impressed were the manufacturers who pilot tested KOLORBON, that a number immediately made plans to use it in new Spring fabrics!

Some facts to interest you: Nationally famous colorists selected KOLORBON's extensive line of 22 high fashion colors . . . colors which when blended, yield countless exciting combinations.

KOLORBON is cut in 3" and 6" lengths to accommodate all spinning systems whether they be cotton, wool or flax.

Of course, KOLORBON is remarkably color-fast, will not bring complaints because of color variation and makes stain removal easy.

Why not have a chat with our Sales Engineers and Color Consultants and find out how you can get the most out of this wonderful "all-through-the-house" fiber? Just write or call the nearest sales office for a prompt and helpful visit.

Hartford Rayon has an unsurpassed record for in-stock, on-time deliveries.

HARTFORD RAYON COMPANY

136 Madison Avenue, New York City

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The country's leading producer of solution-dyed rayon staple

*Hartford Rayon Company's trademark for solution-dyed rayon staple

Enka Bulking Patent

American Enka Corp. has been issued a patent covering a commercial process for bulking or texturizing yarns of all kinds. The U. S. patent, No. 2,807,-862, was issued in the name of E. J. Griset. In the process covered by the patent, a multi-filament yarn is passed into a stream of air and the general direction of travel of the filaments is changed just as they enter the air stream. The company said this proved to be a superior technique for increasing the bulkiness of the resulting yarn.

"Skyloft," a new lofted filament rayon yarn for decorative, drapery fabrics and carpeting, is now being produced by American Enka by this new process. Skyloft is made initially in deniers of 2,200 to 5,300 and will be available in natural color and solution dyed shades. Natural colors range in price from 58 cents a pound for the 5,300 denier to 62 cents for the 2,200 denier.

New Porous Synthetic

Porelon, a new basic synthetic material has been introduced by Perma Industries, Inc. Invented by Harry Leeds, the new material is made up of millions of microscopic pores which, during formation, are made to trap and retain liquids such as coloring agents, ink, medications, lubricants and insecticides. The rate at which the trapped liquids or vapor from the liquids, is given off is controlled by regulating the size of the pores.

Porelon also can be produced without a liquid ingredient for use as sheeting. As such, Leeds said, it becomes a waterproof material that also "breathes," for use in upholstery, diapers, shoe tops, raincoats and wrist watch bands. *For further information write the editors.*

Celanese Bulked Yarns

Celanese Corp. of America has developed a technique to manufacture a range of novelty bulked yarns in which the texture components are separate yarns locked into a high strength core yarn. Bulk effects may be achieved by looping acetate, Celaperm, Arnel or other yarns and twisting them through or around high strength yarns such as Fortisan or Fortisan—36. Fabrics of these yarns may be woven on plain and box looms. *For further information write the editors.*

Courtaulds' Heavier Denier Staple

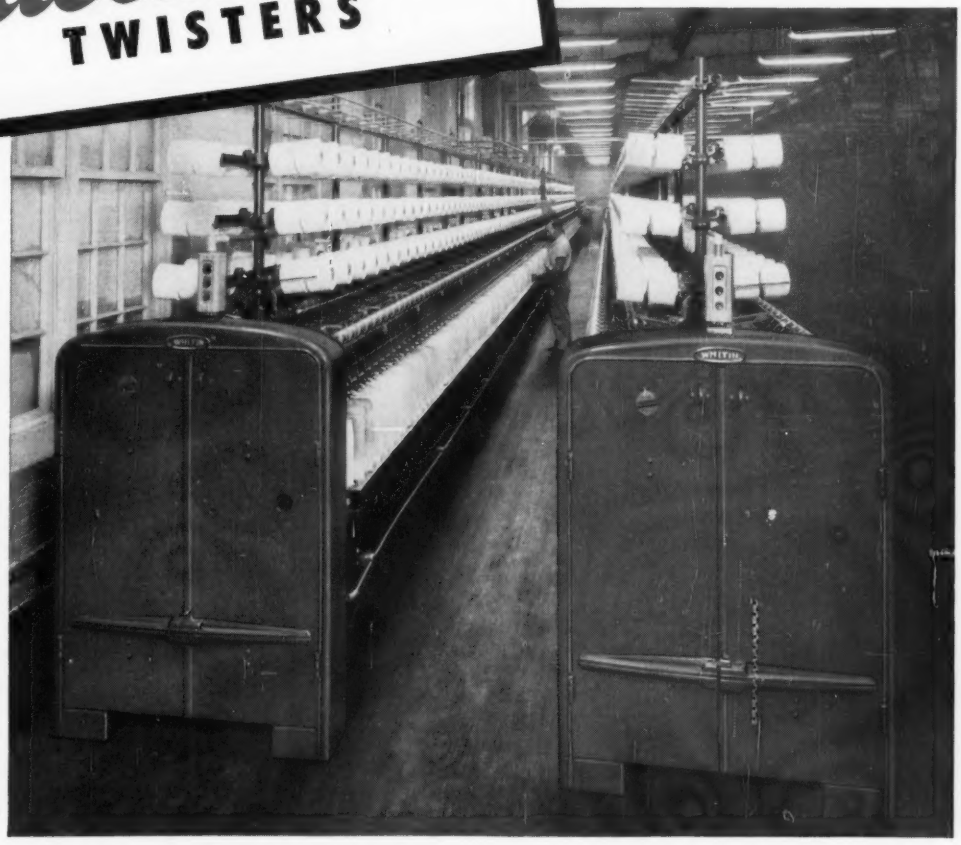
Courtaulds (Alabama) Inc. , has begun production of 3 and 8½ denier crimped white rayon staple fiber for use in bedspreads, blankets and bath mats. It is reported that the company is studying possibilities of manufacturing 8 and 15 denier staple for carpets. Development work leading to an improved staple in these deniers is said to be well advanced.

Morel Heads Silk Group

Hugues Morel-Journel, president of Morel-Journel and Co. , Lyons, France, was elected president of the 23—nation International Silk Association at a meeting of the group's directing board during the recent International Silk Congress in New York. Mr. Morel-Journel, a former treasurer of the association, served as acting president during the past year, succeeding the late Ariste Patton, of France.

Some 300 delegates representing the silk industry and Governments of 19 different nations held a plenary session in New York on October 22. The association at the meeting reported on latest advances in the silk industries of various nations and on the status of the world silk market.

WHITIN Pacemaker* TWISTERS



Consistently Ahead in Production, Performance and Quality

Whitin Pacemaker Twisters have established unsurpassed performance records for their high production, yarn quality, minimum maintenance and operating costs. For cotton and spun synthetic yarns, they are available in 3½" - 6" gauge with 2½" - 4½" rings and with traverses up to 11" depending on yarn and mill requirements. Their notable features are:

- Front bottom roll arrangement to provide a yarn path that is in almost vertical line from bottom of front roll to the guide.
- Laminated bakelite gears meshing with metal gears in the head end, for noise reduction and long wear.
- Spring counterbalanced ring rail.
- Spring weighted anti-friction tape tension pulleys.

ALSO AVAILABLE

- Steel pulleys on continuous drive shaft for spindle drive.
- Slotted ring rails for full length stationary separator blades.
- Stationary guide rod behind spindles for supporting ring rail traversing mechanism which prevents contamination of yarn when ends are down.
- Ball bearing or roller bearing spindles.

Write today for our folder giving detailed information

*Trade Mark

Whitin MACHINE WORKS

WHITINSVILLE, MASS.

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

Helping you handle chemicals with greater safety

The great safety record of the Chemical Industry is inspiring proof that chemical users, as well, can institute and carry out effective safety programs.

As a helpful contribution to this effort, Olin Mathieson has prepared a series of safety wall charts on . . .

CHLORINE • LIQUID CAUSTIC • SULFURIC ACID
ANHYDROUS AMMONIA • NITRIC ACID

These wall charts will keep your employees constantly posted on correct handling procedures, on basic precautions to be observed, and on first aid methods when emergencies *do* occur.

We will gladly send you the safety charts you need without obligation.

MATHIESON CHEMICALS
OLIN MATHIESON CHEMICAL CORPORATION
INDUSTRIAL CHEMICALS DIVISION • BALTIMORE 3, MD.

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MATHIESON

Ammonia • Bicarbonate of Soda • Carbon Dioxide • Caustic Potash • Caustic Soda • Chlorine • Ethylene Diamine • Formaldehyde
Hexamine • Hydrazine and Derivatives • Hypochlorite Products • Methanol • Muriatic Acid • Nitrate of Soda • Nitric Acid
Polyamines • Soda Ash • Sodium Chlorite Products • Sodium Methylate • Sulfate of Alumina • Sulfur (Processed) • Sulfuric Acid

IRC

continuous process rayon helps give the '58 CHRYSLER

THE "FORWARD LOOK" ON THE INSIDE!

FABRIC BY CHATHAM MFG. CO.

Every item in the new Chrysler must contribute to the Forward Look... must be "years ahead" in styling, design, function.

That's why—again in 1958 as in 1957—the Chrysler Windsor features upholstery fabric made with IRC Continuous Process Rayon. No other yarn dyes so evenly, without a trace of streaking. "Seconds" are drastically reduced, mill efficiency rises to new heights.

So if you work with "critical" fabrics—and automotive upholstery is high on the list—specify Continuous Process Rayon.

Use IRC Continuous Process Rayon... uniform mile after mile . . . perfect inch by inch . . . and it costs no more!

You can afford to use

DUOFOL

for your wetting, rewetting and softening operation

Do you realize that it only takes *one drop* of DUOFOL per gallon of solution (2-7 oz./100 gal.) to give your dyeing and compressive shrinkage solutions all the wetting, rewetting and softening properties required?

Although this droplet looks tiny, it has exceptional wetting power — even in water as hard as 500 ppm! And when it comes to speed . . . we can state categorically that DUOFOL is the fastest acting wetting-out agent on the market.

For complete details, write today to

HART PRODUCTS — BASED ON RESEARCH

the Hart Products Corporation

1440 BROADWAY, NEW YORK 18, N. Y.

Works and Laboratories, Jersey City, N. J.

Hart Products Company of Canada, Ltd., Guelph, Ontario

When fabrics are made with modern Avisco® rayon or acetate

THIS TAG

FINISHED GOODS

Does it matter to you whose rayon or acetate you use? It definitely *should*. Even when the quality and price of competing fibers are identical, there's a big extra advantage built into Avisco fibers — a sales advantage you can't afford to overlook.

This advantage is the Avisco Integrity Tag, a sales and confidence builder for your customers and your customers' customers. It is the most meaningful tag in the market place today because *it's got the most behind it.*

Just what *is* behind the Avisco Integrity Tag?

The most complete fabric testing program in the industry. An independent laboratory approves or rejects fabrics made with Avisco rayon or acetate yarns. The approved fabric can then bear the appropriate Avisco Integrity Tag when made up into garments or home furnishings.

What do they test for?

For most-wanted qualities—such as strength; shrink-resistance; colorfastness to sun, soaking, atmospheric fumes and washing or dry cleaning.

Where do I come in?

When the mill makes fabrics containing 50% or more Avisco rayon and/or Avisco acetate, and in a qualified construction, the converter, end product manufacturer, retailer and consumer all stand to gain. *Without* the mill's initial co-operation, all of this important sales potential is lost.

CAN MOVE FASTER IN 1958

How can I make sure that my goods will end up in tagged merchandise?

As a selling point, emphasize to your converter customers that you have done your part to make the goods qualify. Acceptable finishing is up to them. Both of you benefit from the increased sales of finished goods at retail.

How else do I benefit from the Integrity Program?

It's in your interest to help sharpen and back up the claims made for the performance of rayon and acetate fabrics. These represent huge volume potential. The Avisco Integrity Tag is the consumer's assurance of performance-tested fabric quality. It's like an extra salesman on products that carry it.

I've seen a lot of national advertising about the Avisco Integrity Tag. Will this continue in 1958?

Definitely! Dozens of pages of full-color magazine advertising will back the Avisco Integrity Tag throughout the year. *Every ad* makes the public more aware of the tag and what it means.

Where can I get a list of fabric standards?

Call LA 4-7200, or write

AMERICAN VISCOSE CORPORATION
350 Fifth Ave., New York 1

Synthane has a way with textiles... gentle but firm

The fine yarns in today's fabrics require the gentlest of handling. Therefore you find smooth, non-snagging Synthane laminated plastics in bobbins and pirns, in redraw caps, in furnisher rolls, in balloon separator blades, in hosiery turning and examining forms . . . and in many other textile machine parts.

Synthane is light-weight and strong. Synthane is smooth and wear-resistant. It shrugs off abuse; it resists impact, abrasion, crushing, steaming and effects of most commercial sizes and solvents. You may buy Synthane in sheet, rod and tube form or we can machine or fabricate complete parts to your specifications. Write us today for descriptive literature on Synthane laminated plastics. The unusual combination of properties of Synthane will show you why it is such an important product for textile mills and textile machinery manufacturers.

SYNTHANE ... industry's unseen essential

SYNTHANE CORPORATION S OAKS, PENNSYLVANIA

SYNTHANE CORPORATION
45 River Road, Oaks, Pa.

For a Taffeta-Type Finish

. . . . . *use*

STANDAFIN® T CONC.

This is a non-curing resin that gives a firm, swishy hand, imparting on all fibers non-slip qualities - and it is not affected by atmospheric conditions.

Consider these outstanding features of STANDAFIN T CONC.

- Can be applied on conventional finishing equipment.
- Does not build up on rolls or clips.
- Does not get tacky or stick in humid weather.
- Prevents fusing of fabrics when cut with heated knives.
- Does not mark off or cause odor.
- Is compatible with other finishes, such as weighters, dullers, etc.

For a real, honest-to-goodness taffeta finish that will give you everything you require at the lowest cost use STANDAFIN T CONC.

Our many other Standafin products perform equally effectively in other applications. Our representative will be glad to demonstrate.

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STANDARD CHEMICAL PRODUCTS INC.

HOBOKEN, NEW JERSEY • CHARLOTTE, NORTH CAROLINA

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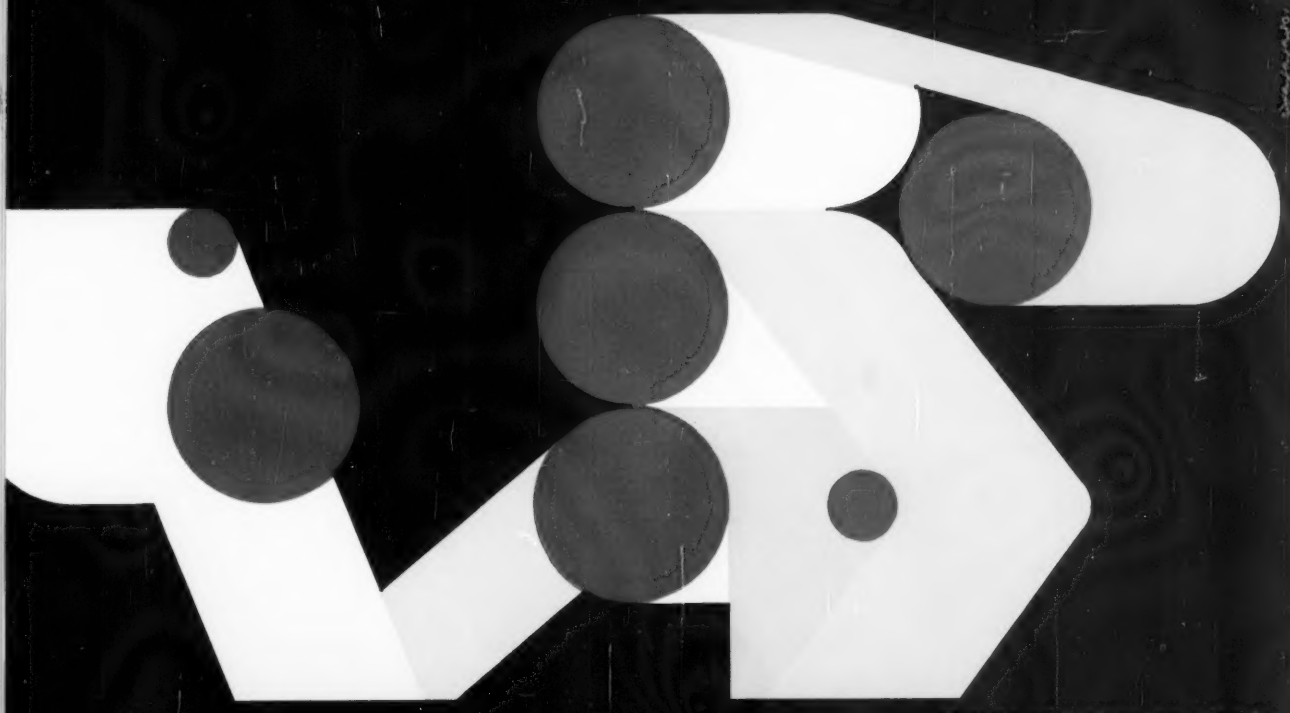


Fast-Dyed Unions on Blends—

Microfix® Dyeing

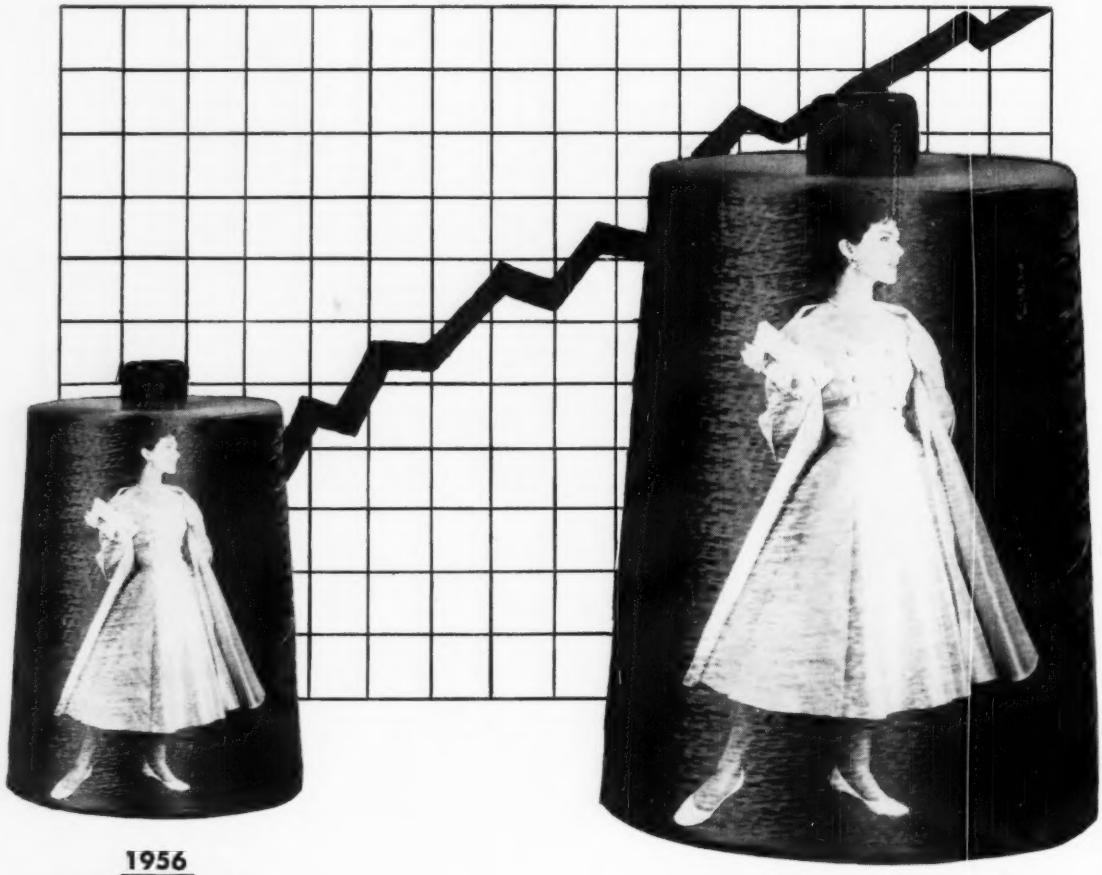
Like all better fabrics—popular multifiber blends, such as combinations of cotton or wool with polyester fibers, call for level shades of top color fastness. MICROFIX pigment-padding dyes give excellent unions on blends and level shades in pale and medium depths on single-fiber goods. Fastness to light, washing, crocking and dry cleaning is especially good. They are applied in conjunction with the resin finishes, MICROFIX BINDERS I, II and III, in a one-bath padding procedure followed by drying and curing.

Upgrade your hard-to-dye blends and regular textiles with fast, economical pigment dyeings at their best!

CIBA Company Inc., 627 Greenwich St., New York

Thank You, RETAILERS OF AMERICA, FOR YOUR ADVERTISING SUPPORT OF CUPIONI®

A BEMBERG RAYON YARN CREATION



1956
911,932 LINES

JANUARY THRU JUNE, 1957
2,896,258 LINES

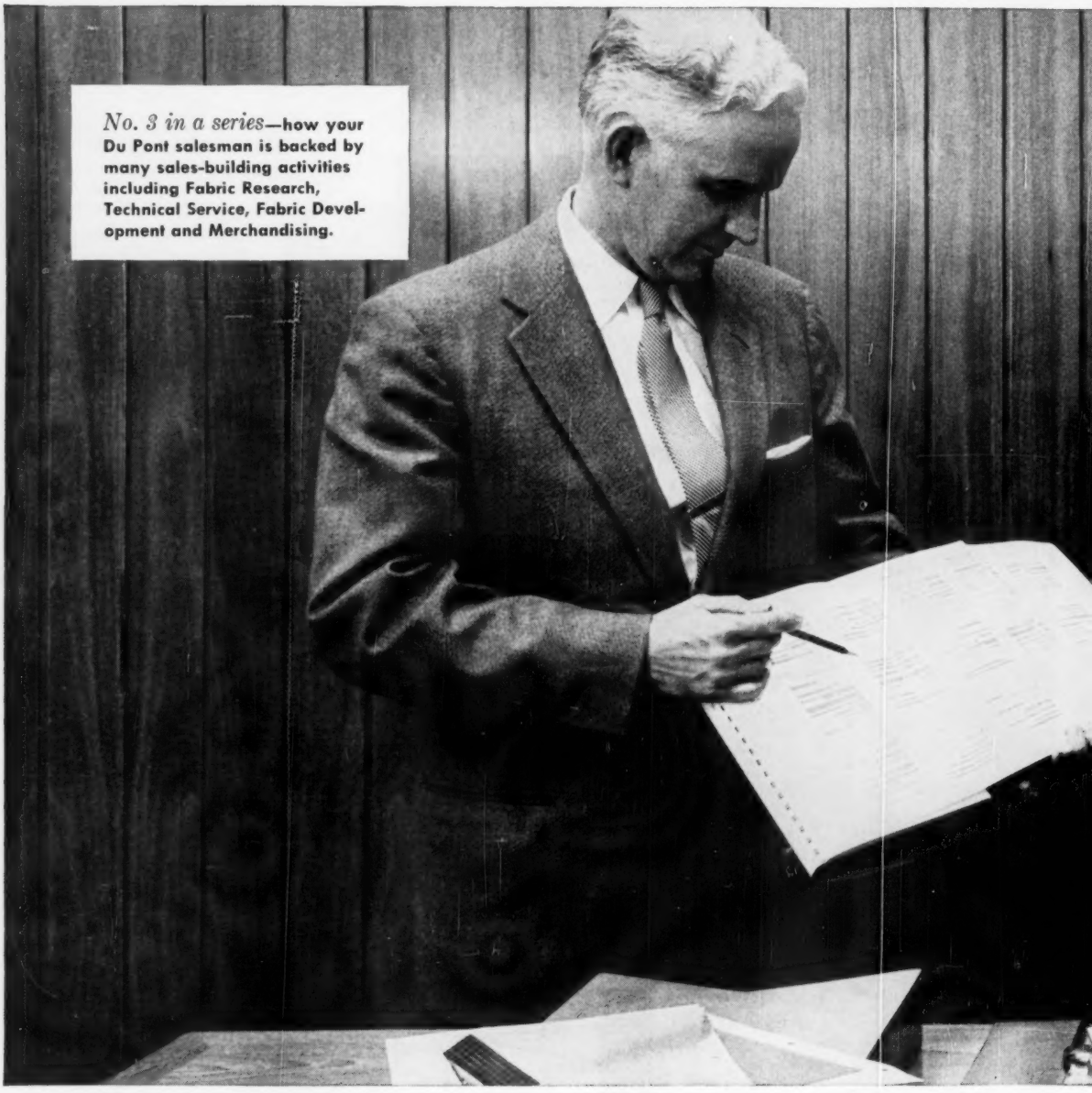
The Advertising Checking Bureau reports officially that during the 6-month period from Jan. 1 to June 30, 1957, over 10,000 retail store advertisements, totalling 2,896,258 lines, were devoted to merchandise made of Cupioni rayon (more than three times that of the entire year of 1956!). **And every single line was paid for by the stores themselves!**

Such confidence must be deserved!

Cupioni continues to smash sales records coast to coast in an endless variety of garments in women's, children's, and men's wear. Cupioni's sales potential has never been fully tapped. Is it working full time for you?

Bemberg®
ARISTOCRAT OF RAYON YARN

AMERICAN BEMBERG • Main Office: 261 Fifth Avenue, New York 16, N.Y. • Plant: Elizabethton, Tennessee



This fabric architect turns fiber facts into

Dave Hardin of Du Pont Fabric Development is showing Budd Levinson, President of Fabrex Associates, the prototype of a new fabric idea.

Dave and his associates are skilled artist-engineers. In their hands new blends, constructions and styles are developed to meet today's need for fabrics advanced in styling and engineering . . . fabrics that assure cutter and consumer satisfaction.

Sometimes they translate the properties of Du Pont fibers into a fabric designed to fill the requirements of a specific market. For instance: a hard-wearing, easy-to-care-for, low-cost work shirting. In other cases they experiment with blends and constructions in an effort to engineer entirely new fabrics. Fabrics which respond to the continuing demand for advanced

FROM RAW FIBERS TO RETAIL SALES . . .

designs for new business

coloration, styling and function. Every fabric design is carefully checked and tested for practical merit at the Chestnut Run Laboratory before it's introduced to the trade.

Du Pont Fabric Development creates these new fabric ideas to expand your business in fabrics containing man-made fibers and to build new and larger markets for the textile industry.

Du Pont believes it can increase the market for its fibers and thus benefit its customers by providing useful assistance to all levels of the textile industry. It's through your Du Pont sales representative that you, as a customer, have access to a range of technical and merchandising information unique in the textile industry.

Product and Process Notes from Du Pont

Slashed Loom Beams—zero-twist acetate warp yarns on loom beams are now available slashed and ready for weaving. Called Type 15, these beams require less processing in the mill and make possible better-quality yarns and fabrics. They are priced the same as unslashed, low-twist section beams.

Cross-Dyed Decorative Yarns—the use of cross-dyed nylon decorative yarns or trim permits more attractive styling of sweaters of "ORLON"* acrylic fiber. The sweater body can be dyed or left white while the decorative yarns are dyed to any shade. This new cross-dyeing method permits greater flexibility in choice of shades and helps avoid accumulation of dyed-yarn inventories. Either spun or filament nylon can be used.

No. 60 Thick and Thin Rayon—a new development containing short, uniformly repeated tapered flakes is now available in 450, 1,100 and 2,200 deniers. Du Pont No. 60 lends novel effects to flat and pile upholstery fabrics, to draperies, and is an excellent decorative yarn for circular knitwear. It is also well suited for hand-knitting yarns, shoe and millinery fabrics.

New Nylon Carpet Staple—Type 600, a new dull nylon staple for carpets, is now commercially available. When combined in varying percentages with Type 100 bright staple, Type 600 eliminates "shading," and retards apparent soiling with no sacrifice of color durability.

Technical Information Bulletins—contain detailed, practical information on Du Pont product and process developments. They cover fiber properties, mill processing, dyeing and finishing. Refer to your copies frequently; they can save you time and money. To be sure you have all the bulletins you need—check with your DuPont salesman or Technical Service representative.

*Du Pont's registered trademark for its acrylic fiber.

DU PONT
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BETTER THINGS FOR BETTER LIVING
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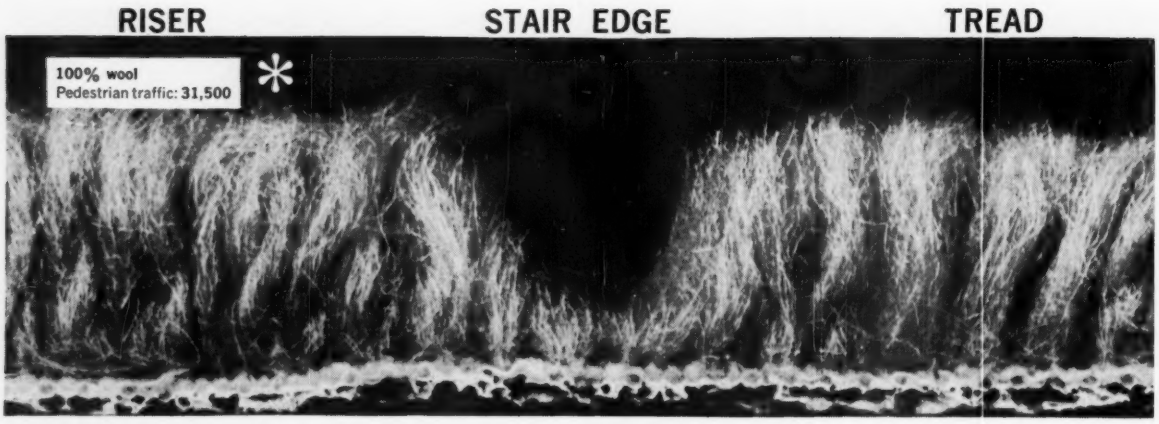
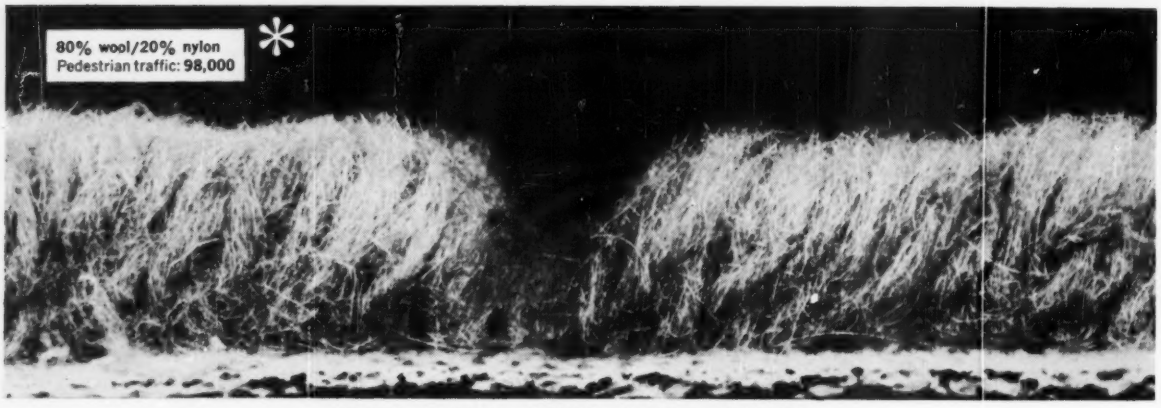
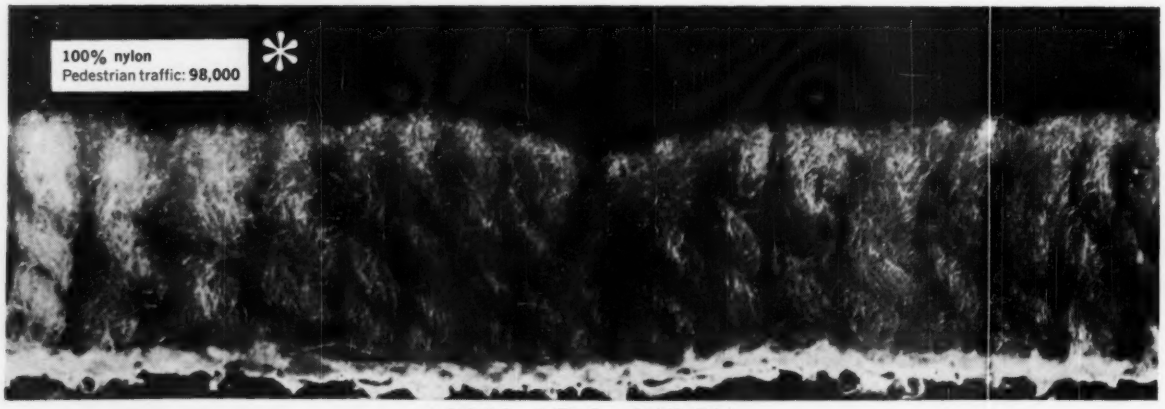


100% WOOL



80% WOOL/20% I.R.C. NYLON



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* Note that the 100% wool strip wore out almost completely with but one third the pedestrian traffic of the other two strips.

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*strips of carpeting were identical except for fiber content.

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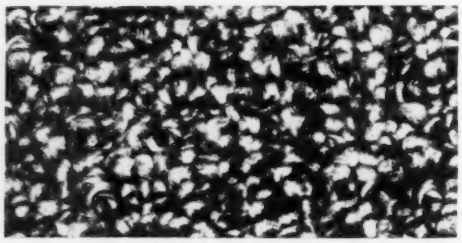

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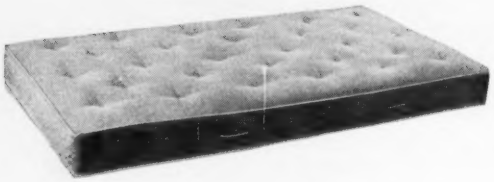

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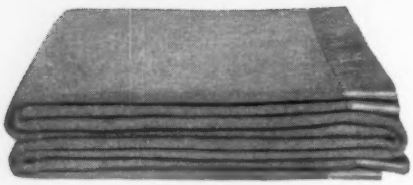

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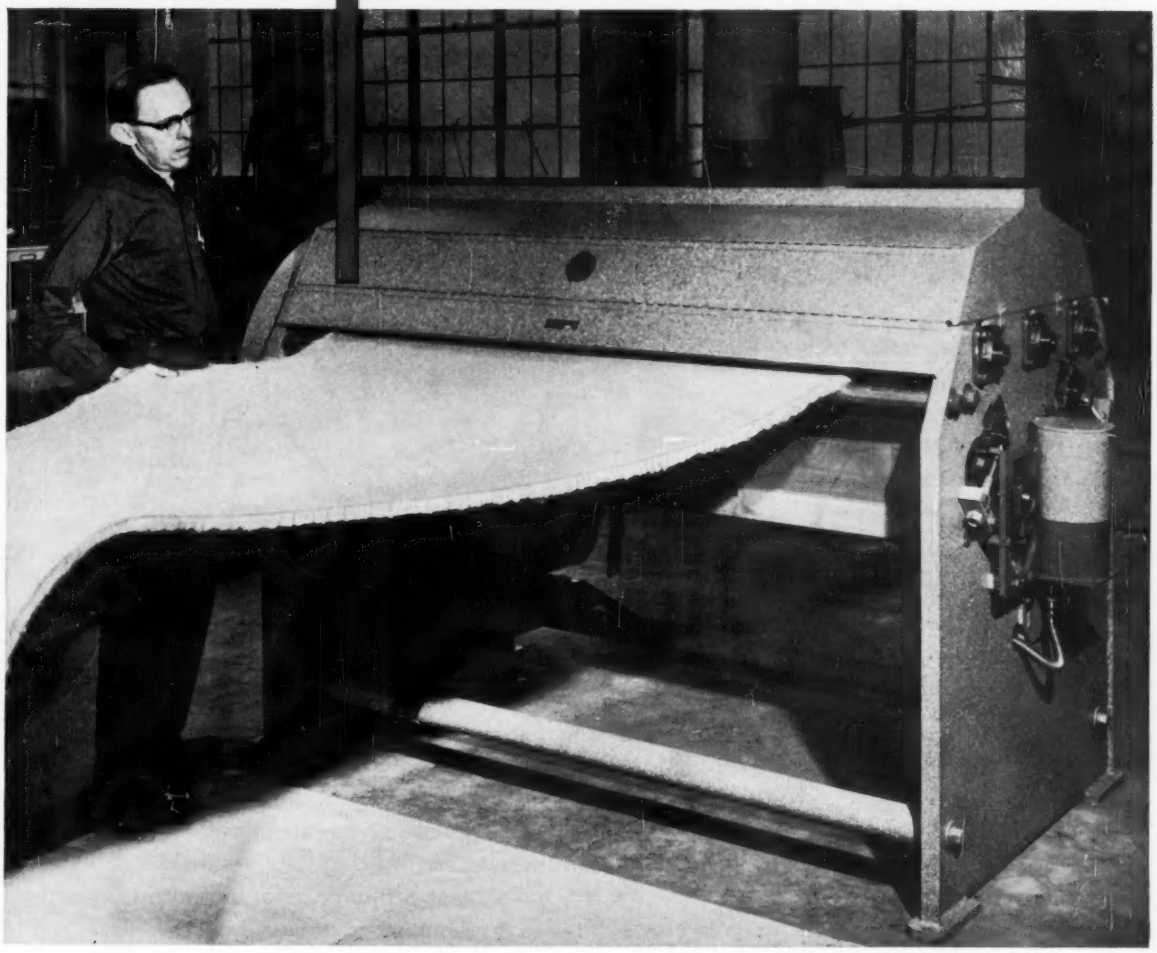

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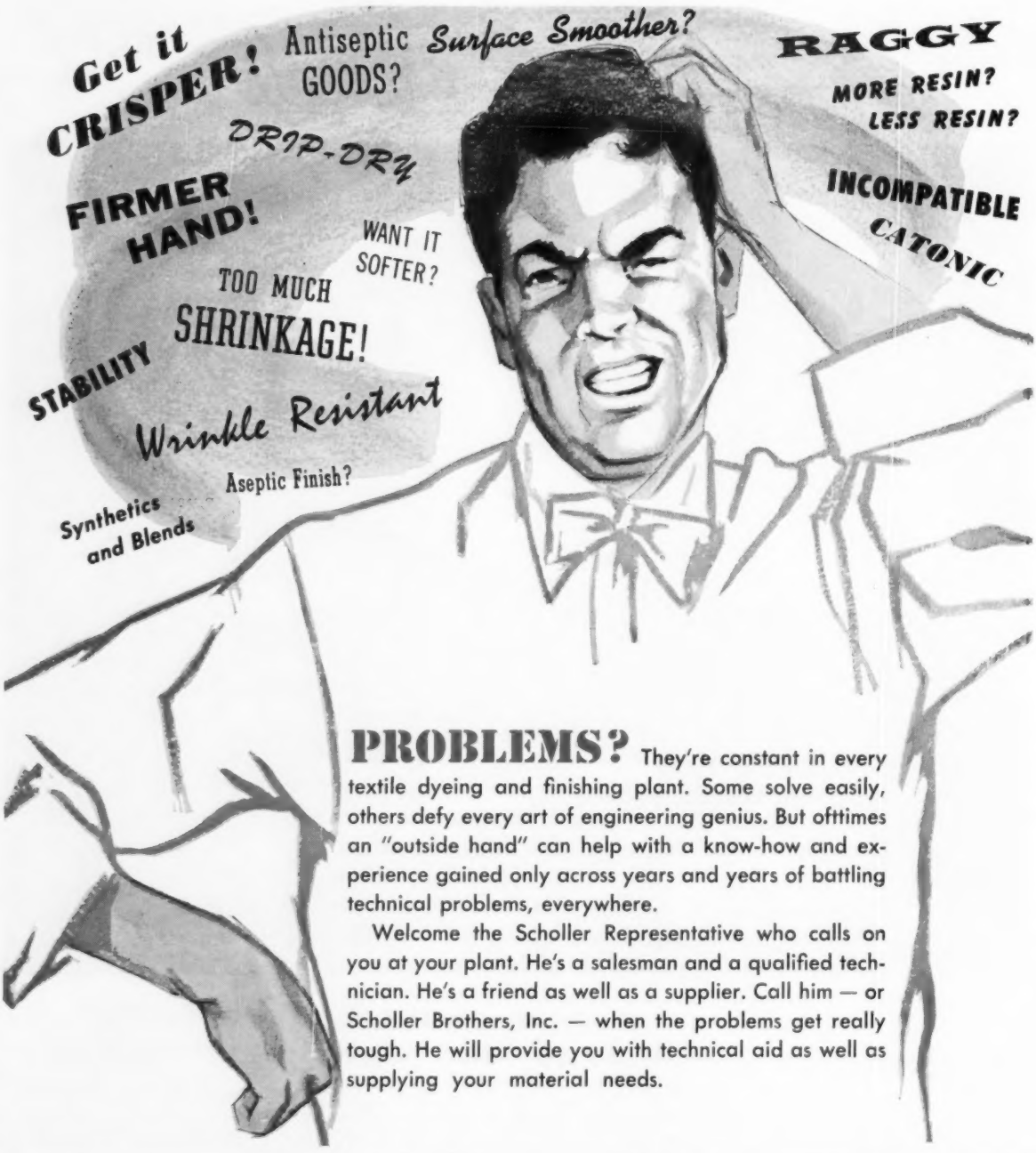

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MODERN
TEXTILES MAGAZINE

December 1957
Volume 38 Number 12

Publisher's Viewpoint

The Coming Triumph of Man-Made Fibers

That the times are on the side of man-made fibers is once again confirmed—this time by the most recent study of inter-fiber competition published by Textile Organon, statistical bulletin of the Textile Economics Bureau, Inc., based on data compiled by the Du Pont Co. Substantial growth in consumption of man-made fibers in virtually all important areas of textile end use is reflected in figures made available by the study.

Between 1937 and 1955, consumption of man-made fibers soared from 7% of all fibers to 26%—an impressive gain. In the same period the percentages represented by wool and cotton declined. Cotton fell from 79½% to 64½%; wool from 12% to 9%. (*For a detailed summary of the report see page 36*).

All of us in the man-made fibers industry should be tremendously heartened by the figures in the Organon report. They bring home to us that we are living in an age where man-made materials (or synthetics as some like to call them) are triumphant. There can be no doubt, that measured in terms of need and the trend of the times, we are in the right industry. The world, and particularly the United States of America, *needs* man-made textile fibers. The fact that consumption of these fibers has increased so greatly in the last 20 years, while percentagewise consumption of natural fibers has declined, establishes beyond doubt that our industry is one created by the modern world to satisfy overwhelming needs peculiar to the modern world.

Why is the tide running so strongly in favor of man-made fibers? The reasons are complex and various but they may be summed up in these facts: the population of our country has been growing rapidly; and with this increase in people there has been a tremendous rise in our standard of living. Americans have wanted better fabrics at increasingly lower prices; fabrics with greater variety and fashion appeal than can be obtained with natural fibers. They have also wanted fabrics that are easier to maintain, and this has been given them increasingly by the non-cellulosic fibers in easy-care fabrics.

The increasing use of man-made fibers in textiles is part, of course, of a much broader trend in the modern world toward increased use of synthetic materials in many applications. Ours is truly the age of synthetics, an age that is just beginning. We can expect to see more and more synthetics used in more and more fields as time goes on.

This being the case, our man-made fibers industry should have the courage of those who know the future belongs to them. There are times, unfortunately, when our industry does not seem to realize that the times are running in its favor and that its potential for growth is unlimited. Our industry needs to understand its own value and to face the fact that it has arrived at maturity. It needs the courage to fulfill the important part in modern life that the age has thrust upon it. In connection with consumers who use its yarns and fibers, our industry needs to grasp the need to keep faith, to provide in a statesmanlike way the basic knowledge about its products that will help the public utilize them wisely and in ever increasing poundages as the years go by.

A. H. McCullough

PUBLISHER

OUTLOOK IN TEXTILE MARKETING

By ROBERT C. SHOOK, Textile Economist

Guidance by positive principles needed to speed recovery of lost ground

If the textile and apparel industries, and the thousands of retailers who distribute their products to the ultimate consumer, were to recognize and be guided by a few positive merchandising principles, clothing and other textile products would quickly make up some of the ground they have lost to other products during most of the post-war period.

The Time is Now—Appliances and durable goods have lost the zip of their early post-war boom. Television is old hat. Suburbanites are glamorizing the stay-at-home life by dressing up and going out. A new fashion cycle is just getting underway. The stage is all set for greatly improved textile-apparel sales during the next five or ten years. Everything is ready; everything, that is, except the industry and the retailers.

Plan of Action is Simple—It is a positive and constructive merchandising policy, a marshalling of forces behind the policy, and a steady and consistent follow-through of effort. The merchandising policy itself is as simple as one, two, three.

One—Catch up with the consumer. Sales in many cases have been poor because the industry hasn't given the consumer what she wants. What she wants is better-looking merchandise, having superior quality and performance. Time and again the consumer, by her actions, has spelled out a simple fact, and one which will be invaluable if the industry will simply recognize it and be guided by it: *Merchandise of superior appearance, quality and performance, at higher prices, not only stimulates dollar sales and profits, but unit volume as well.*

Two—Don't degrade good sound merchandise by trying to save pennies and half pennies. Again the consumer has spelled out, by her actions, a stern warning, which the industry and the retailer in their own interest should heed: *Excessive competition on a price basis not only depresses dollar sales and profits, but unit sales as well. The greater the degradation of appearance, quality and performance, the greater the loss in all categories.*

Three—Kill the myth that longer-wearing fibers and fabrics always depress unit and dollar sales.

There is no doubt that, *in some cases,* this is true. In industrial markets, for example, substitution of a strong for a weak fiber will usually reduce the total amount consumed. There are other cases where this is also true. But in apparel markets, we are dealing with a different set of factors altogether.

One of these differences is the distinction between the "appearance" life and the "wear" life of a garment. With a few exceptions, most garments are probably discarded before they become thread-bare and are "worn out."

But there is another consideration, and a more important and more positive one, now that we have a growing volume of minimum-care fabrics and garments. *That is the tendency of consumers to increase their wardrobe of garments that are easier and less expensive to take care of.*

Ease-of-Care Garments Stimulate Buying—Maybe the "appearance" life, as well as the, "wear" life of these garments is greater than that of similar garments that require more ironing, or must be sent to the dry cleaners, but the suit or the dress that comes out of the washer and the dryer looking clean and neat creates a strong motive for the consumer to buy more and to have a bigger wardrobe.

Dr. Shook is vice president and research director, A. W. Zelomek Associates, Inc., 350 Fifth Ave., New York City.

As undismayed as his seagoing ancestors, durable Seabury Stanton sets sail this month in a refitted Berkshire Hathaway to hunt a whale of a lot of new fabric business.

Berkshire Hathaway's BRAVE NEW VOYAGE

By Jerome Campbell
EDITOR, MODERN TEXTILES MAGAZINE

AT AN AGE WHEN lesser men might be thinking of retirement Seabury Stanton opens a new and possibly the most crucial chapter in his long career as one of the country's hardest working textile leaders. As this report is being written his company, the result of a merger early in 1955 of two of the authentic giants of New England textiles, Berkshire Fine Spinning Associates and Hathaway Manufacturing Co., is moving swiftly back into full production as a stripped-down, tautly muscled and thoroughly rejuvenated fabric producer. It remains, however, after a year of rigorous modernizing, one of the huger mill combinations in an industry where bigger and bigger aggregations of spindles and looms seem a necessity of the times.

The new Berkshire Hathaway aims to make itself felt weightily in the textile market in the months and years ahead as a competitive, fast-moving operation capable of producing a diversified line of cottons and synthetics. Blowing away the clouds of rumors and speculation that the huge array of mills drawn together by the 1955 merger might be liquidated or whittled down to a minor part in the textile world, the reborn Berkshire Hathaway will be impressive by any standard—it will have 8 mills in operation by early next year with a total of 677,368 spindles and 16,380 looms. The new Berkshire Hathaway will be, in the words of Seabury Stanton, "a modern, well-managed, well-merchandised textile company" and its future operation will prove, Stanton believes, that such a textile company "can operate successfully in New England."

The histories of both Hathaway and Berkshire are long and complicated—in essence the story of textiles in New England—too long, by far, to be told here. Berkshire Fine Spinning Associates were pulled together in 1929 to salvage a baker's dozen or so of mills and finishing plants that were the usable flotsam of the severe decline that all but wrecked the New England textile industry in the late 'twenties and early 'thirties. Hathaway Manufacturing Co., a much smaller outfit, was created back in 1889 by a group of New Bedford financiers looking to invest their money in a rising new industry to replace the declining whaling trade of which New Bedford was once the storied center.

During its early years Hathaway was fortunate in drawing into its management a remarkable man, James E. Stanton, Jr., a New Bedford native, a descendant of whaling captains who as a boy had learned the meaning of hard work and endurance in several voyages in his father's ship. After many years of experience in mill management and cloth

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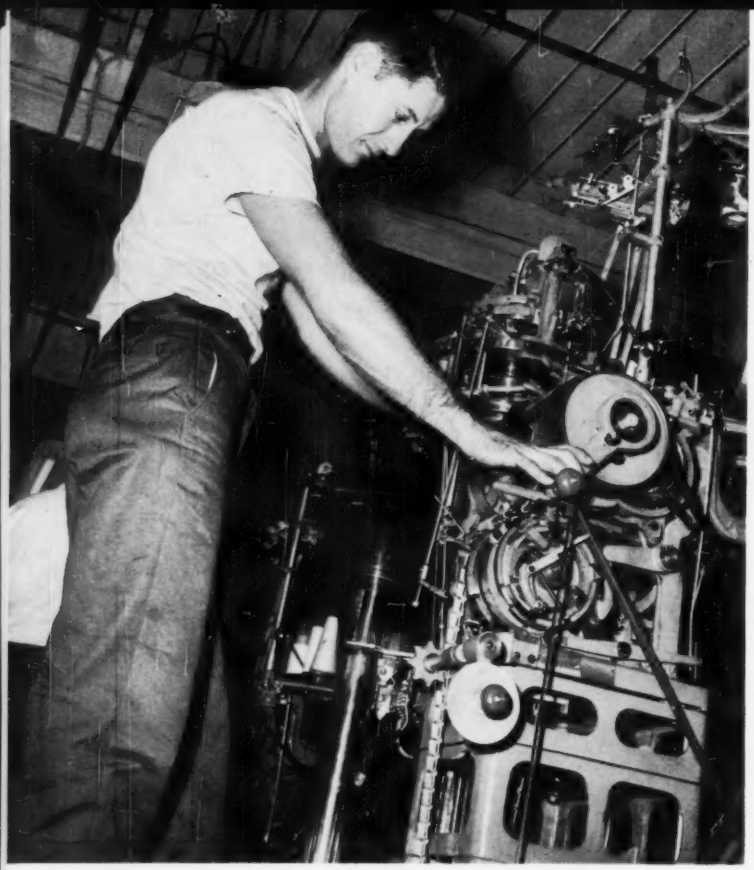


COMPLEXITY AND PRECISION—A mechanic makes adjustments on a Scott & Williams KN machine under trial in the company's plant at Laconia, N. H. In one of these unbelievably complex machines, there are 2,424 different parts and, including needles, 6,980 pieces.

To increase demand for its circular hosiery machines, Scott & Williams beat the drum long and loudly for seam-free stockings. Women went crazy over them. Now S & W are happily snowed under with orders.

How one machinery maker built

Story & photos by the editors

TEXTILE MEN WHO LIKE TO DO their own market research as they walk down the street must have noticed long ago that more and more women appear to be bare-legged even in cold weather. Most of these bare legs are not actually bare, however. They are covered with seamless nylons so sheer that the wearers seem to have no stockings on. The seam, once the indication that a feminine leg was stockinged, has disappeared.

This increasing absence of seams in women's nylon stockings is largely due to the efforts of Scott & Williams, the company that makes machines for knitting seamless stockings as well as a wide range of other circular knitting machinery. So great is the demand for seamless nylons, that Scott & Williams cannot keep up with the flood of orders for its KN seamless stocking knitter, a machine whose 400 and sometimes 474 smoothly whirring needles turn out a seamless stocking at the rate of one every 16 minutes.

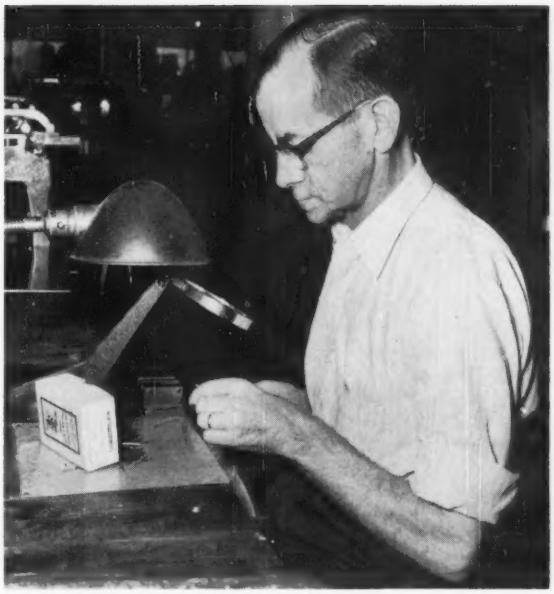
Scott & Williams, of course, modestly insists that the spreading popularity of seamless stockings with women (especially younger women) is not its doing alone. The company gives credit to a number of hosiery manufacturers for getting behind the big move toward seamless, by producing first class seamless stockings and advertising them lavishly. However, most insiders in the women's hosiery trade insist that Scott & Williams deserves the lion's share of the praise for causing the popularity of seamless stockings to gain the crashing momentum of an avalanche.

Like most big successes in any field, Scott & Williams' achievement did not occur easily or overnight. The audacious decision of a textile machinery manufacturer to stimulate demand for a product its machines could make in an effort to create a bigger market for them began to take shape back in 1936. At that time an emissary from Wilmington arrived at Laconia, N. H., where Scott & Williams has its plant, bearing a quantity of a new kind of synthetic yarn under development and as yet unnamed. The Du Pont man asked Scott & Williams' people to try out the yarn on their circular machines for knitting stockings.

Scott & Williams' engineers were quick to see that the new yarn which later became famous as nylon, had great potentialities for knitting a superior kind of women's stocking on the company's machines. Scott & Williams had been making a variety of these machines for virtually every kind of knitting for many years. In particular, it had been producing since 1915, its famous Model K machine for making women's hosiery. This was the machine which, when it was first introduced, literally astounded the textile world by its capacity to knit a woman's stocking with inturned welt, fashion seam, fashion marks and anti-run back.

Over the years, the K machine had been improved greatly. The appearance of the new Du Pont synthetic, with its great strength, elasticity and unique ability to retain a shape once that shape had been given it by heat setting, presented a new opportunity for the K machine, Scott & Williams was quick to grasp. The company set to work at once on a new model of the K machine capable of knitting a finer gauge stocking and thus utilizing to best advantage nylon's unusual properties as a yarn for high quality women's hosiery. The new machine joining its exceptional merits to the merits of nylon would result, Scott & Williams people foresaw, in a new kind of stocking, smarter and better fitting and more glamorous than even the most expensive full-fashioned silk stockings. Since it was knitted on a circular K machine, the new stocking was a seamless tube shaped to the leg. It was thus different from the conventional full-fashioned stocking which is knitted on a flat bed machine and emerges as a flat fabric which must be doubled over and sewed to become a stocking. The sewing creates the vertical seam which identifies this kind of stocking.

Just when Scott & Williams was preparing to push vigorously the use of its improved stocking machine in conjunction with nylon, the war brought an urgent conversion to military work. When the war was



WHERE EXPERIENCE COUNTS—Smaller parts inspection is a routine operation in preparing for assembly of the knitting machines.

a new market

ended and nylon once more available, the company lost no time in reviving its plans to popularize nylon seamless stockings made on Scott & Williams circular machines.

The task ahead was not an easy one. Full-fashioned stockings with their characteristic seams were strongly entrenched both in the hosiery industry and with women consumers of stockings. Many hosiery manufacturers and retailers felt strongly, as a result of experience with seamless stockings in the pre-nylon days, that seamless stockings did not hold their shape, sagged and wrinkled on the customers' legs, and were generally identified in the minds of consumers with poor quality, unfashionable stockings. To get rid of this long-standing prejudice, Scott & Williams determined to build a hot promotional fire right under the hosiery industry by winning the consumers themselves over to seamless stockings.

And thus probably for the first time in textile history, a maker of textile machinery set out to create a bigger market for its machinery by creating a demand for the product made by the machines.

By 1947, the big campaign was under way. To the tune of many hundreds of thousands of dollars, Scott & Williams advertised seamless nylons in fashion magazines, and supported a big publicity campaign to win fashion editors and other influential people to enthusiasm for seamless hosiery.

As part of this effort, the company in a spectacular abandonment of the crusty New England conservatism that marks the textile machinery industry, hired a squad of pretty and highly articulate models. These long-stemmed American beauties fanned out around the country demonstrating the new seamless nylons to sales people and consumers in department stores. As they demonstrated, they talked, voicing persuasively the advantages of the new kind of high fashion stockings.

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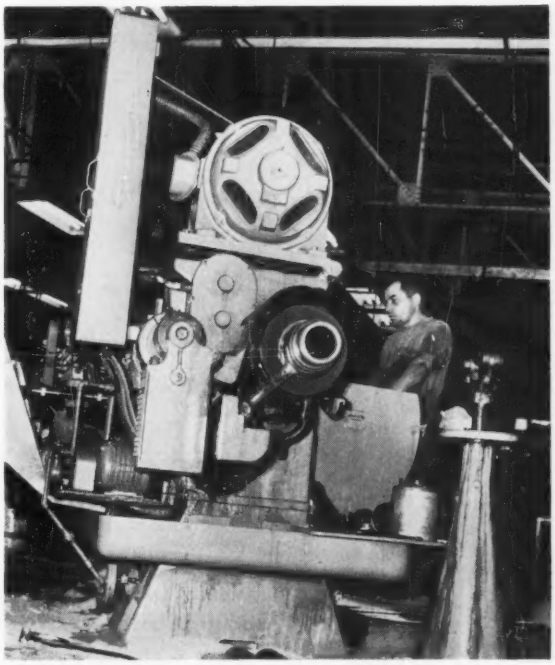


BIG MACHINES MAKE LITTLE MACHINES—Batteries of huge machine tools such as this are used in fabricating parts for Scott & Williams KN circular hosiery knitters.

Man-made fibers use gains sharply

CONSUMPTION of man-made fibers in textiles increased almost four times between 1937 and 1955, a new study of the Textile Economics Bureau shows. Published in a special supplement of the *Textile Organon*, the Bureau's statistical bulletin, the study shows that 1,743,600,000 pounds of man-made fibers were consumed during 1955 by apparel and textile manufacturers out of a total of 6,693,900,000 pounds of all fibers, excluding the hard and soft vegetable fibers (such as manila, hemp, jute, etc.)

Measured percentagewise, the man-made fibers in 1955 amounted to 26% of total fiber consumption. In 1937, man-made fiber consumption was 340,800,000 pounds or 7% of a total of 4,714,700,000 pounds. Cotton's share in 1955 was 64½% compared with 79½% in 1937. Wool's share was respectively 9% and 12%; silk less than 1% and 1½%; linen's share was less than 1% in both periods.

The special supplement of the *Organon* presents data on 102 end uses of man-made fibers, as well as cotton, wool, silk, linen and the hard and soft vegetable fibers through 1955. The data are based on material prepared by the textile fibers department of the Du Pont Co.

The *Organon* points out that simple, pound-for-pound comparisons of textile fibers do not adquately assess the position of man-made fibers in the textile industry. On the basis of utility poundage, which would measure the full use derived from any given pound of fiber, the man-made fiber position would be much higher. Utility poundage would take into account first the different processing losses incurred in the various fibers through the weaving and knitting stage; second, the sheerness and coarseness of the fabric produced per pound of fiber; and third, the wear-life of products made of different fibers.

In regard to the apparel uses of fiber, the *Organon* notes that certain factors should be taken into consideration in evaluating the trend in end use consumption of all fibers. Over the period of the Du Pont study, there has been a trend toward lighter-weight apparel encompasses the use of cloth weighing less per yard and the use of fewer yards in the average garment.

Another factor affecting fiber trends in the color-style element which, in women's dresses for instance, leads to an obsolescence of clothing before the full wear-life has been realized. Another factor has to do with the different ways in which the consumer may use a given item. The sport shirt, for example, is used by many workers today in place of a work or dress shirt; women's slacks are now often used for street wear or in place of dungarees by women factory workers.

Comparing 1949 and 1955 fiber consumption figures, consumption of man-made fibers for men's and boy's wear in the latter year totaled 209,900,000 pounds. This compares with a consumption of 113,200,000 pounds in 1949. Over the same period, cotton consumption rose from 830,900,000 pounds to 967,500,000 pounds and wool from 186,000,000 to 191,000,000 pounds.

In women's and misses' wear, man-made fiber consumption amounted to 349,400,000 pounds in 1955 compared to 351,100,000 pounds in 1949. This loss was due mainly to a decline in the use of rayon and acetate fabrics in women's dresses and knit and woven underwear. Cotton consumption in this category rose from 291,600,000 pounds in 1949 to 403,100,000 pounds in 1955, while wool declined from 156,800,000 pounds to 143,600,000 pounds.

In children's and infant's wear, man-made fibers were used to the extent of 40,500,000 pounds in 1955 compared with 26,000,000 pounds in 1949. Wool consumption in 1949 and 1955 respectively was 31,000,000 pounds and 29,200,000 pounds, while cotton was 171,600,000 pounds and 250,500,000 pounds.

Consumption of man-made fibers in home furnishings totaled 301,200,000 pounds in 1955 as against only 87,600,000 pounds in 1949. The use of cotton rose from 1,033,200,000 pounds in 1949 to 1,193,800,000 pounds in 1955, while wool usage declined from 211,400,000 pounds to 161,900,000 pounds.

In the other consumer-type products which includes such products as apparel linings, apparel piece goods, narrow fabrics, hand-work yarns, shoes, luggage, toys and miscellaneous items, man-made fiber consumption rose from 131,400,000 pounds in 1949 to 162,800,000 pounds in 1955.

A substantial gain in use of man-made fibers is shown also for industrial products. A total of 626,500,000 pounds was consumed in 1955 compared with 286,800,000 pounds in 1949. In the industrial field, cotton consumption fell from 945,500,000 pounds in 1949 to 816,200,000 pounds in 1955, while wool declined from 59,100,000 pounds in 1949 to 25,000,000 pounds in 1955. Man-made fibers made notable gains in transportation upholstery, automobile seat covers, tires, electrical applications, filtration uses, sewing thread, reinforced plastics and rope and twine.

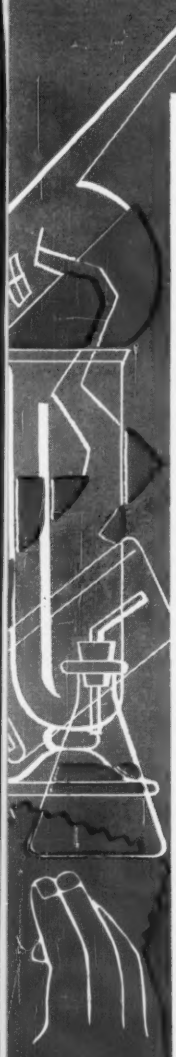
New Darlan Suiting

"Velo-Touch," a new men's tropical weight suiting fabric combining Goodrich's Darlan with worsted, will be used in men's tropical suits exclusively by Pincus Bros.-Maxwell, Inc., of Philadelphia. The suits, which represent the first application of Darlan, a new man-made fiber, to men's apparel, will be available for next Spring and Summer. *For further information write the editors.*

Oil-Repellent Cottons

Cotton fabrics, highly repellent to both oil and water and possibly other liquids, which show little change in other properties have been prepared by chemical treatment at the Southern Utilization Research and Development Division of the U. S. Agriculture Department. Reports of the investigations, with results of tests of the chemicals and compounds used may be obtained free by writing the editors.

DYEING and FINISHING SECTION



BLEACHING
PRINTING
SPECIAL
PROCESSING

REACTIVE DYES — what they do

THE RECENT MEETING in New York City of the American Chemical Society included a colloquium on the dyeing of cellulose. One of the speakers, T. Vickerstaff of Imperial Chemical Industries, Ltd., of England, discussed the use of the new Procion dyes in coloring cellulosic fabrics. The following is a summary of his talk.

A radically new approach to dyeing cellulose is represented by the reactive dyes first introduced in 1956 as Procion dyes by Imperial Chemical Industries, Ltd. Procion dyes are water soluble dyes with relatively little affinity for cellulose in the normal sense, but the dyes also contain a grouping which under aqueous alkaline conditions will react with the hydroxyl groups of cellulose to bind the dye to the fiber by a direct chemical linkage. Thus the dye becomes in effect part of the fiber molecule. As might be expected, dyeings of this kind are completely fast to solvents, including dry cleaning solvents, and the linkage is also resistant to washing processes.

This new method of attaching dyes to cellulose has many attractive features apart from fastness to washing. In the first place, it carries all the advantages of simplicity of application inherent in water soluble dyes, but at the same time releases the dyestuff chemist from the necessity of making the dye molecules to a rigid pattern. Furthermore, the use of simple rather than complex molecules results in a generally increased brilliance of color.

No less important are the effects of the dye structure on dyeing methods. These simple molecules of low molecular weight diffuse more rapidly into the fiber than complex direct dyes, with the result that dyeing may be carried out in the cold and still give a higher degree of levelness from fiber to fiber and better penetration into fibers than can be achieved in the same time with direct dyes at a temperature near the boil. In fact, dyeing may be carried out merely by impregnating cellulose fibers with a solution of Procion dyes containing sodium bicarbonate or carbonate and allowing the wet fabric to stand overnight.

The dyes are also particularly suitable for application by continuous dyeing methods, since their low affinity means that there is little risk of a change in the concentration of the dye liquor through which the fabric is passed even after long runs. Furthermore, the processes of impregnation with dye and chemical reaction can be separated by passing fabric first through dye solution and then through an alkaline solution followed by short steaming, or can be combined in one operation by passing fabric through a solution containing both dye and mild alkali followed by drying or steaming. Modification of these processes can be used on all types of conventional dyeing and printing machinery.

Dr. Vickerstaff reviewed recent developments in the techniques of applying reactive dyes. More efficient cold dyeing methods have been developed by studying the effects of pH; improvements have been made in the simple padding process, and in the pad roll process. Cold dyeing and cold printing processes for viscose carpeting are of interest.

The original Procion dyes were relatively highly reactive and capable of combining with cellulose in the cold. By modification of the reactive group it is possible to make less reactive dyes, termed Procion H dyes which combine only at higher temperatures. A great extension of the shade range available in reactive dyes has now taken place and there are now available eight dyes of the highly reactive type and 11 of the less reactive Procion H dyes.

Procion dyes are manufactured and distributed in the United States by Arnold Hoffman & Co., Inc. For further information about these dyes, write the editors.

Dow Expands Textile Staff

The Dow Chemical Co. has announced expansion of its textile development group. Zefran, Dow's new textile fiber, will be produced in commercial quantities early in 1958.

Harry E. New heads up textile yarn and fabric development in the firm's textile development department, managed by J. F. O'Donnell. Other additions to the group include Hal E. Brockmann, David M. Clark, Robert L. Burgess, Charles R. Sheehan, and David C. W. Kwok.

Formation of a sales group in the textile fibers department also was announced by Amos L. Ruddock, Zefran sales manager, with an office established at Dow's New York headquarters. In the new sales group are Alfred Greenfield, J. Burnette, William Guerrant, James Jones, Andrew Lazarus, John McKelvey, Keith Ward and G. J. Zahringer, Jr.

Amylose, Amylopectin Available

The Technical Division of Stein Hall & Co. , Inc. , is now marketing for the first time in this country commercial quantities of the principal components of potato starch—amylose and amylopectin. Stein Hall acquired exclusive sales rights in the U. S. and Canada on both products through an agreement with Avebe of Veendam, Holland.

Amylose, possessing film forming properties, is expected to find widespread use in the textile and paper coating fields. Amylopectin has been used in textile sizing and finishes to stiffen and strengthen fibers and prevent fuzziness. Stein Hall, which will sell amylose under the name of Superlose and amylopectin as Ramalin, has published a new 12—page brochure, "Superlose and Ramalin New Products," which describes their physical and chemical properties. *For copies write the editors.*

RAYON IS BIG BUSINESS

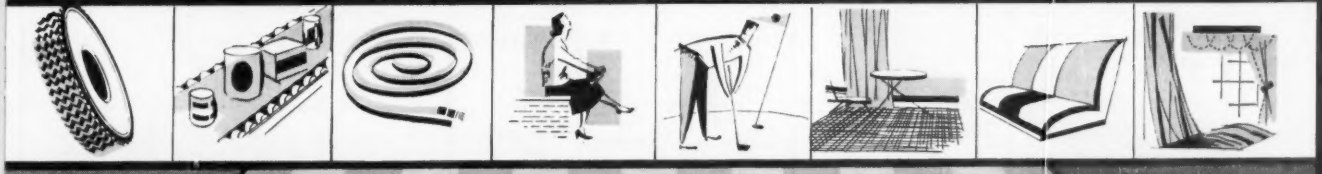
Rayon is big business today. Every hour of every day this country produces enough Rayon to encircle the world forty-five times—once every minute and fifteen seconds.

Rayon tire cord builds safety into today's high speed driving evidenced by the fact that every 1958 production automobile will ride on Rayon tubeless tires... in upholstery and automotive fabrics Rayon contributes to the strength, durability and appearance... carpeting for both home and office has longer life when Rayon is added... when added to men's and women's apparel fabrics, Rayon contributes to their eye-appeal and wearing qualities.

In countless fields of application, from heavy duty industrial textiles to shimmering fabrics in the smartest salons, the virtues of Rayon are recognized. In fact, Rayon production is as big as all other man-made fibers put together.

Antara Chemicals is proud of its part as a supplier to Rayon manufacturers of processing chemicals such as spin bath additives, clarifiers, sequestering agents, surfactants for finishes, softeners and lubricants, optical whitening agents, and fixing agents for dyes.

General Dyestuff Company, one of our country's oldest and most experienced suppliers of dyes and pigments, has a complete range of products for coloring Rayon in the mass, as well as Rayon piece goods and yarns.



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Quality Control

Tests to improve weaving and cloth quality

By Norbert L. Enrick*

Mill Test Procedures No. 10

THE TESTS recommended here are designed to aid in reducing loom stops during weaving, improving cloth quality, increasing output and keeping cloth weights on standard. Detailed test procedures are furnished for this purpose, showing the objectives of each test, the sampling, method, and evaluation of test results. As a rule, the frequency of testing would be as follows:

Type of Test	How Often	How Many
Quill Check	Weekly	20% of Looms
Warp Takeup	"	5% " "
Fabric Strength	"	5% " "
Cloth Analysis	"	5% " "
Loom Settings	"	5% " "
Folders	5 Weeks	All
Yardage Clocks	5 Weeks	All

* Institute of Textile Technology, formerly with Werner Textile Consultants.

Supplementary illustrative material provides in Figure 28 a form used as a worksheet and reference record of the quill check test, and in Figures 29, 30 and 31 forms are shown as used in conjunction with the loom settings test, furnishing a breakdown of causes of loom stops, a general check-survey of loom conditions, and a detailed list of settings to be checked and recorded.

In addition, Figure 32 shows a typical example of the variations in settings in a weave room, comprising a group of 200 looms, where no quality control program had as yet been provided. Where a mill has maintained a good quality control throughout processing, including weaving, it has been shown how the tests and controls provided here would aid in making fabrics of superior quality, with lowered seconds, and at a highly competitive cost.

QUILL CHECK ON LOOMS

Purpose

By examining the discarded quills or filling bobbins

Werner Tex. Cons. New York 17, N. Y.

QUILL CHECK

Mill: Specimen — Weave Room: #2 — Tested by: J. B. — Date: 19

Loom No.	Style	O. K.	Bad Quills	Loom No.	Style	O. K.	Bad Quills	Loom No.	Style	O. K.	Bad Quills
301		✓		337		✓		373	150 Acet		X
02		✓		38		✓		74	" "		X
03		✓		39		✓		75	" "		X
04		✓		40		✓		76	" "		X
05		✓		41		✓		77	" "		X
06		✓		42		✓		78		✓	
07			W	43			W	79		✓	
08		✓		44			W	80		✓	
09		✓		45		✓		81		✓	
10		✓		46	150 Acet		Q	82			W
11		✓		47	" "		Q	83		✓	
12			W	48	" "		Q	84		✓	
13		✓		49	" "		Q	85		✓	
14		✓		50		✓		86		✓	
15			Y	51		✓		87		✓	
16		✓		52		✓		88		✓	
17		✓		53		✓		89		✓	
18		✓		54		✓		90		✓	
19		✓		55		✓		91		✓	
20		✓		56		✓		92		✓	
21		✓		57		✓		93			W
22		✓		58		✓		94		✓	
23		✓		59		✓		95		✓	
24	150 Acet.		X	60		✓		96		✓	
25	" "		X	61		✓		97		✓	
26	" "		X	62		✓		98		✓	
27	" "		X	63		✓		99		✓	
28		✓		64		✓		00		✓	
29		✓		65		✓					
30		✓		66		✓					
31		✓		67		✓					
32		✓		68		✓					
33		✓		69		✓					
34		✓		70		✓					
35		✓		71		✓					
36		✓		72		W					

CODE

Fork	Feeler
A = Too many full bobbins.	W = Too much yarn in bunch.
B = Too many nearly bare.	X = Badly formed bunch.
C = Too many about half full.	Y = Too many bare.
D =	Z =

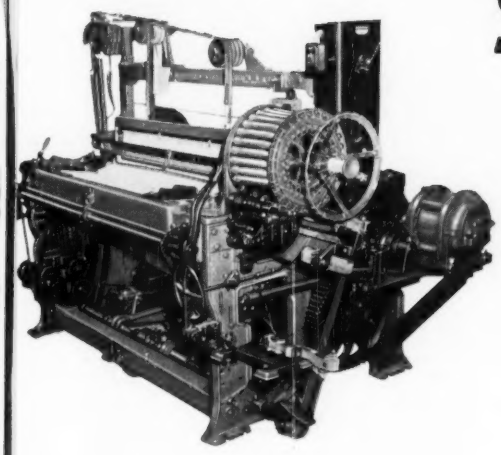
Q = Damaged Quill.

Fig. 28 (left)

LOOM CHECK

Mill		Checked by		Date	
Loom No.					
Style No.					
Feeler					
Fork					
Reed					
Binder					
Picker					
Magazine					
Fur					
Shuttles					
Felt on Lay					
Tension					
Loose wind in Magazine					
Notes					

Fig. 29



Stehedco presents

The REINFORCED DURAWELD PICKER STICK

with this Unexcelled Combination . . . . .
Strength and Whip, plus Resistance to Warping

Here is another Stehedco *exclusive* . . . a picker stick that gives you advantages never before available.

- ★ DURAWELD Picker Sticks are made of multiple laminated veneers of *high grade hickory* reinforced with veneers of vulcanized fiber, permanently bonded with phenolic adhesive into a uniform panel.
- ★ This construction gives DURAWELD Picker Sticks far *greater strength* while retaining the desired *"whip"* for high-speed looms.
- ★ These laminated, reinforced picker sticks are much *less susceptible to warping* than ordinary picker sticks.
- ★ Stehedco DURAWELD Picker Sticks will pay for themselves many, many times with *superior performance* and *longer life.*
- ★ Designed for high-speed Draper looms, these picker sticks also give superior performance on slower single box and light multiple box looms.
- ★ The exposed, or nearly exposed, fiber at the picker end of the stick provides greater wear resistance to the lay end slot.

Invest in Reinforced DURAWELD Picker Sticks now and start counting your savings.

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Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass.—Greensboro, N. C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas—Albert R. Breen, Chicago, Ill.

LOOM SETTINGS CHECK

Mill	Style	By	Date

Loom Number

Race Plate Flannel
Race Plate to Shuttle Box
Reed to Box Plate
Glass Rod in Lay
Temples over Lay
Pins Plate in Shuttle
Shed over Lay
Fork over Shuttle
Shed over Shuttle
Leather in Box Guide
Leather on Binders
Loom Checks
Dist. Shut. - Binder HE
Shut. straight in Slot HE
Pos. of Picker on Stick HE
Hole in Picker
Pick. Pos. Dist. to Reed
Pos. of Fork when Picking
Pos. of Crankshaft Picking
Sweep Length HE
Pos. of Fork Fin. of Sweep
Dist. Reed-Fell Cl. Fin. Sw.
Harness and Heddles
Harness Timing from Reed
Hgt. Lug Strap HE
Hgt. Picking Arm HE
Elec. Feeler Setting
Timing Whip Roll Cam
Dist. Shut.-Binder DE
Shut. straight in Slot DE
Pos. Picker on Stick DE
Sweep Length DE
Hgt Lug Strap DE
Hgt Picking Arm DE
Brake Position
Prot. Finger Dist.
Crankarm Bearing
Crankshaft Bearing
Rocker Shaft Bearing
Dist. Between Sheaves
Dist. bet. Harness Hooks
Harness Jacks and Hooks
Press Roll Covering
Hgt. Breast Beam Floor.
Hgt. Whip Roll Floor
Hgt. Dropwires Floor
Dist. Dropwires - Whiproll
Pos. Whiproll in Bearing

Fig. 30

on the loom, it is possible to discover improper operation of the feeler motion on the loom or the builder motion on the quiller. Close control of these factors will improve cloth quality and decrease yarn waste.

Sampling

From the container on each loom which receives the bobbins as discarded by the changing mechanism, collect ten of the discarded quills, being sure that they are representative of the total rejects in the container.

Procedure A: Looms Operating on Fork Only.

Examine the quills for the following:

1. Excessive number of full bobbins.
2. Excessive filling breaks, characterized by a large number of bobbins of all sizes.
3. Excessive number of nearly empty bobbins.

Procedure B: Looms Operating on Fork and Feeler.

1. Excessive number of bobbins containing more yarn than the maximum standard for the bunch.
2. Excessive number of completely bare bobbins.
3. Damaged quills.

Evaluation

Record the faulty bobbins found during the test. Since ten bobbins are inspected from each loom, the percentage of faulty bobbins is:

Faulty Bobbins per Loom, % = Faulty Bobbins in Sample x 10.

Where this percentage exceeds the tolerance limit established by the mill, this should be reported, so that corrective action can be taken on the loom or filling bobbin winding frame, as may be indicated.

WARP TAKE-UP DURING WEAVING

Purpose

This test is performed in order to determine the amount of contraction of the warp during weaving, as an aid in controlling cloth weights and meeting cloth specifications.

Procedure

1. Ascertain proper operation of the cut marker on the slasher, by checking with a yardage counter the distance between cut marks.
2. Mark the start and finish of five tested cuts on the slasher. Mark the loom beam to show that it is under test.
3. Flag the loom when the tested loom beam is put on. Follow each cut and measure the woven yardage on a perch table.

Supplementary Test

Because of the effect of picks-per-inch inserted by the loom on warp contraction, a supplementary test of picks-per-inch is desirable. This involves the recording of the pick counter reading on the loom at start and finish of each cut. The difference between the reading at start and finish represents the total picks inserted per cut.

Calculations

1. Determine percent warp take-up from:

$$\%\ \text{Warp Take-up} = \frac{\text{Slashed Yards} - \text{Woven Yards}}{\text{Slashed Yards}} \times 100$$

2. Find the picks-per-inch from:

$$\text{Picks/Inch} = \frac{\text{Total Picks per Cut}}{\text{Woven Yards per Cut} \times 36} \times 100$$

Here the figure 36 converts yards to inches.

3. For each of the above calculations, average the results for the five cuts tested per loom.

Evaluation

Where warp contraction or pick insertion are found to be off-standard, corrective action on the loom is indicated.

FABRIC BREAKING STRENGTH

Purpose

To maintain cloth quality and conform to specifications.

Sampling

Follow the scheme shown below in cutting cloth specimens to be broken. (Fig. 33)

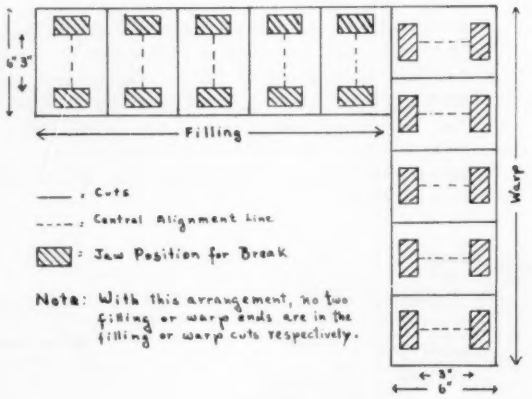
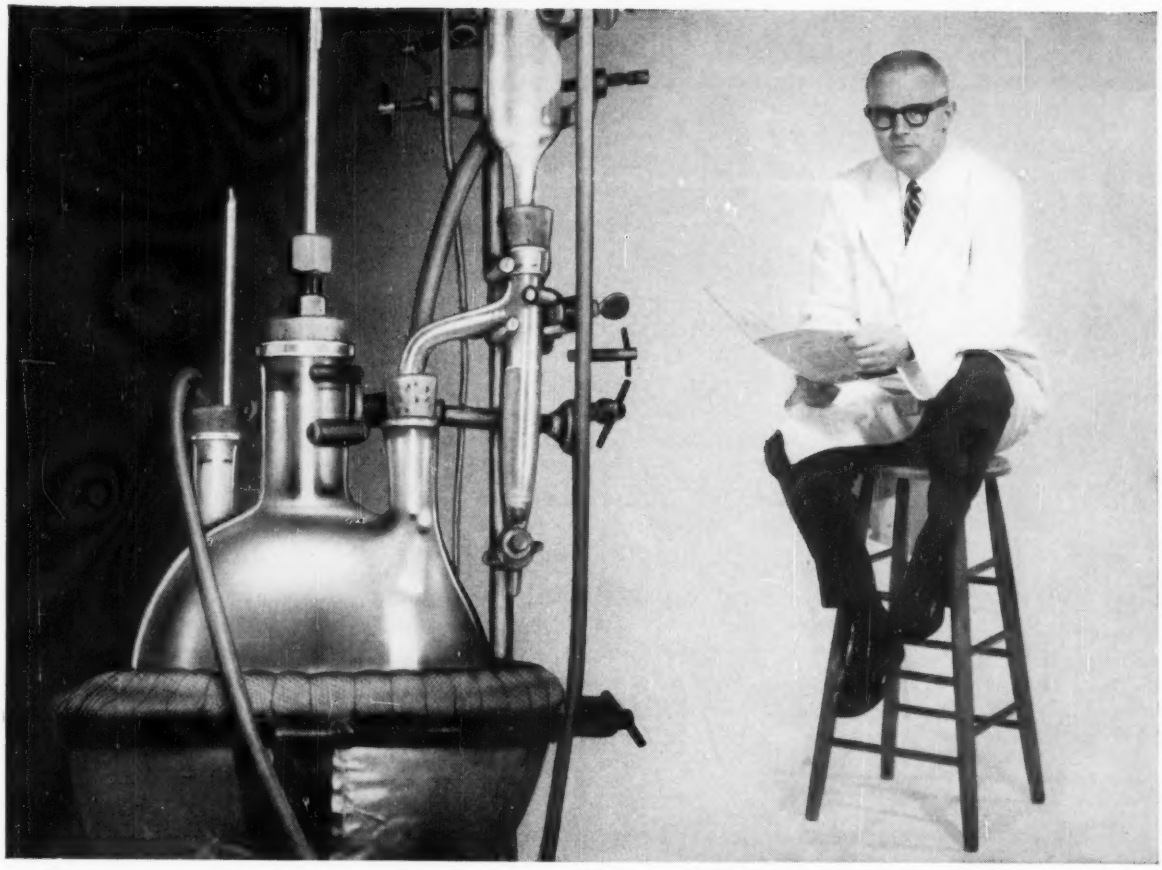


Fig. 33

Procedure

1. Insert specimen, tighten jaws, and break.
2. Eliminate and repeat on a new specimen any

(Continued on Page 68)



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ADHESIVES—Homopolymers of 2-ethylhexyl acrylate are useful as adhesives and bonding agents.

TEXTILE FINISHES—Copolymers of vinyl acetate with higher acrylates are suggested for finishing cottons.

LUBRICATING OILS—Investigate copolymers of higher acrylates for viscosity index improvers and pour point depressants.

Applications don't stop here! A roundup of known and potential uses for the higher acrylates and ethyl acrylate, butyl acrylate and 2-ethylhexyl acrylate are described in—ACRYLIC ESTERS (F-7434)—For a copy write Union Carbide Chemicals Company, Department H, Room 328, 30 East 42nd Street, New York 17, New York.

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REPORT FROM EUROPE

BY SPECIAL CORRESPONDENT

Cellulosics cut back while output of newer fibers climbs

MANCHESTER—Courtaulds and British Celanese are closing down some production facilities by year's end. Courtaulds' Aber plant saw output cut back 50% during summer. By Christmas, this plant—Courtaulds' largest of four operated in Flintshire—should be virtually closed. Some 1,300 employees are involved; some may be put to work at Flint Castle factory or at Holywell. Reason for cutback: Long term trend away from filament yarn towards staple fiber.

The British Celanese shutdown is taking place at Great Harwood Record mill where 100 employees have been engaged in acetate yarn winding. Another Celanese plant—at Spondon —will reduce employment. Some 30% technical and laboratory staff have been cut back. Reason for cutbacks: slow third quarter sales which did not improve with autumn plus reduced exports. Celanese is also temporarily discontinuing production of Celon, its nylon 6. Probable reason: Rising costs and Courtaulds-Celanese merger.

Nylon Trade Fair in March—British Nylon Spinners will again organize a nylon Trade Fair—March 10 to 14—at Royal Albert Hall, London. BNS has recently shown ingenuity in organizing a nylon "air lift" to Ireland. The company made an arrangement with Aer Lingus for special nylon service from Cardiff to Dublin. Other nylon shipments are now going via established air freight routes, and, if speed is really essential, by passenger airplanes. The aim is speed-up in deliveries to Irish hose manufacturers, weavers and knitters. Wider air service is under study.

Big Increase in Newer Fibers—Production of non-cellulosic man-made fibers in West Europe, which has soared steadily since 1945, is due for another jump in 1958. Percentage increases don't mean much, as far as Europe's man-made fiber output is concerned, since production was slight only a few years ago.

Next year's European (including U. K.) output is expected to top 355 million pounds; it was less than half that in 1956. Despite sharp gains likely on the Continent, Britain is expected to hold its own—with better than half that produced across the Channel. U. K. producers should turn out 130 million pounds of non-cellulosic man-mades next year, compared with some 220 million on the Continent.

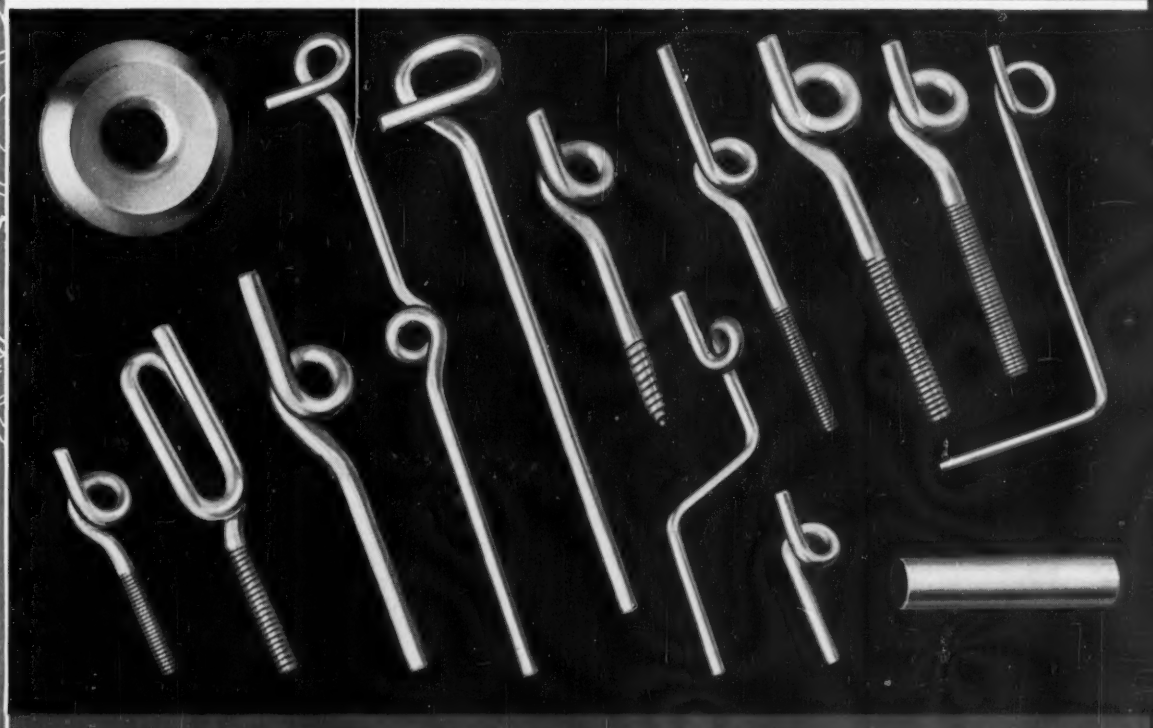
France Leads on Continent—French non-cellulosic fiber production should reach 75.2 million pounds in 1958, followed by 65 million in West Germany, and 62 million in Italy. Other European non-cellulosic production in 1958: 10 million pounds in Holland; 6.4 million in Switzerland; 5.6 in Belgium and most of the remainder in Sweden, 500,000 pounds.

Cellulosic Fiber Output—Britain, which has lagged behind Germany in the production of cellulosic fibers, has a good chance to catch up in 1958. Expansion projects by major mills should result in a 1958 British cellulosic output of 605 million pounds, about the same as that expected in Germany. Italy should be next with 515 million, followed by France (332 million), Holland (113), Austria (110) and Belgium (84 million pounds).

Belgian-German Get-Together—American industrialists might have a little trouble understanding a recent meeting which took place between Belgian and German terry-cloth manufacturers. The Germans had accused the Belgians of dumping so the two parties got together across the table to exchange information on costs and prices. Robert Caussin, a director of the Belgian National Scientific Organization committee, pretty well expressed the feel-

(Continued on Page 51)

MACHINERY and EQUIPMENT SECTION



MITCHELL-BISSELL

SATIN FINISH *Chromium Plated Guides*

FOR ORLON, DACRON AND OTHER NEW SYNTHETIC YARNS

Mitchell-Bissell originated the Satin Finish for porcelain thread guides and pioneered its application to chromium plated guides on the principle that by breaking the contact between yarn and guide, tension and consequent thread wear are reduced. This broken contact is achieved by providing a fine granular surface for the guide. Because of the special preparation of the wire, this "hill-and-valley" contact surface of our Satin Finish Chromium Plated Guides is permanent and the hard, dense finish itself remains dull and satiny almost indefinitely.

Be sure to get the original . . . Mitchell-Bissell Satin Finish Chromium Plated Guides . . . for proven quality and the ultimate in service. Can be made in any diameter of wire, and in any desired shape. Also available in Mirror Finish.

Guides are shown slightly reduced in size.

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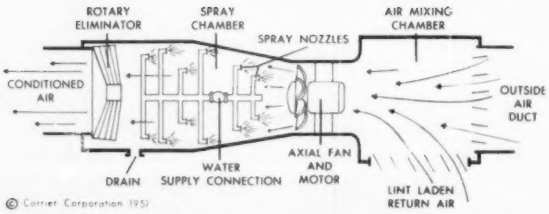
Southern Representative: R. E. L. Holt, Jr. & Associates, Jefferson Bldg. Greensboro, N. C.

MITCHELL-BISSELL CO.

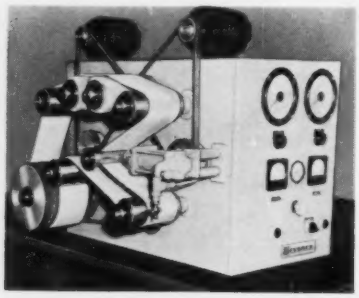
New MACHINERY

New EQUIPMENT



New Rings Aid Output

Draper Corp. reports that mill installations of its new Mirror-Gold rings show that this new product improves breaking-in schedules while retaining all of the advantages of the Draper Mirror Finish ring. They are currently available for most spinning conditions.

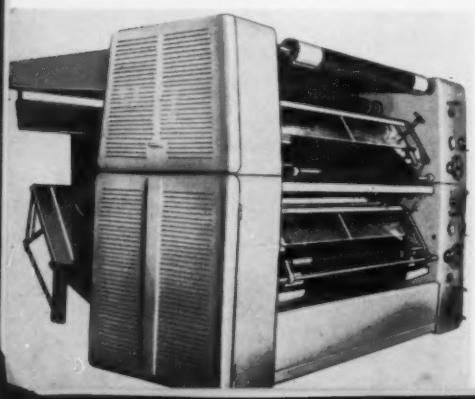


Test Napping Machine

The David Gessner Co. now has available to mills for research and fabric development a desk-top, test napping machine. The machine is said to simulate the effects obtained on a Hi-Torc napper and permit the study of differences in napping effect on fabrics made of various types of material, on fabric design, and on fabrics treated with softeners, dyestuffs, etc. *For further information write the editors.*

New Shearing Machine

Cosa Corp. now has available a new, double head shearing machine said to have greater speed, accuracy and ease of control in all shearing operations. In this newly-designed machine, made by Vollenweider, Ltd., of Switzerland, adjustments for height of shearing and passage of seams are made by raising and lowering the shearing beds. *For further information write the editors.*

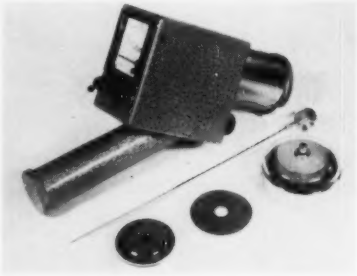


Open Width Bleaching

Comerio Ercole Engineering Works & Foundries has issued a circular describing its open width bleaching range with sodium chlorite, suitable for fabrics of cotton, rayon, spun rayon and synthetic fibers. Minimum space is required for the range, which is said to have good penetration. The range offers no danger for the fabric, and provides evenness and uniformity of dyeing. *For further information write the editors.*

Ideal Drawing Installations

Ideal Industries, Inc., announced recently that Gallway Mills Unity Plant, LaGrange, Ga., installed 36 deliveries of new Ideal drawing. Chicopee Mfg. Co., Walhalla Division, Walhalla, S. C., added 20 deliveries of Ideal drafting system changeovers. Balston Yarn Mills, Inc., Lincolnton, N. C., installed 42 Ideal changeover deliveries, and Ponemah Mills completed 32 Ideal changeover deliveries. Springs Cotton Mills, Lancaster, S. C., is now changing over 864 deliveries of drawing to Ideal feathertouch drafting.

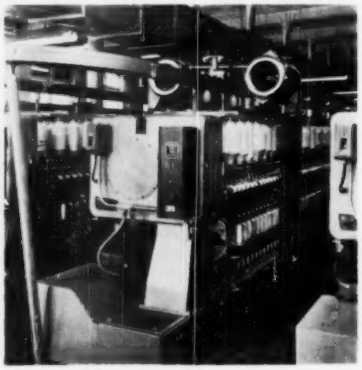


Static Detector

A new portable instrument for detecting and measuring static electricity charges is now available from the United States Radium Corp. Called the Statometer, the instrument flow is designed for instant measurement of trouble spots in process flow, and is said to provide immediate determination as to whether or not disturbance is caused by static. The instrument, with a measuring range of 0 to 500,000 volts, is constructed around a chamber which ionizes the air in the vicinity of the static disturbance. *For further information write the editors.*

New Air Conditioning System

Development of a new system for air conditioning large textile mill areas has been announced by Carrier Corp. Key feature of the system is a completely new spray-type air conditioning unit which is described as the first major change in central station conditioning apparatus in nearly 50 years. The central air conditioner is said to take only one-third the space of present equipment, provide more accurate humidity control and virtually eliminate system cleaning and maintenance. *For further information write the editors.*



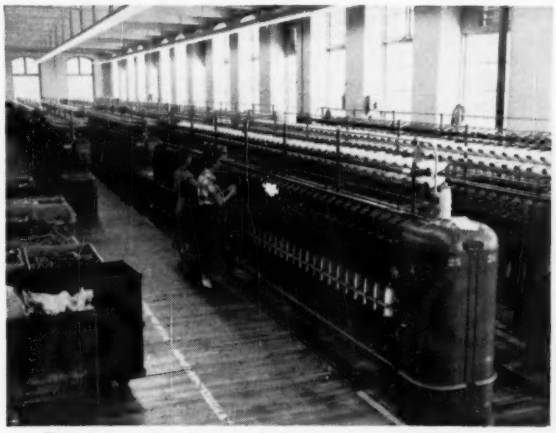
Improved Mill Cleaning

Bahnson Co. offers its Cross-Jet Cleaner model as a new approach to mill cleaning problems. Three functions-frame, room and self-cleaning—are reported combined in one compact, self-propelled unit. The Cross-Jet offers fixed and rotating air jets. Four rotating nozzles clean the entire creel section of a frame, room walls, ceilings, columns and fixtures, in addition to the cleaner itself. *For further information write the editors.*

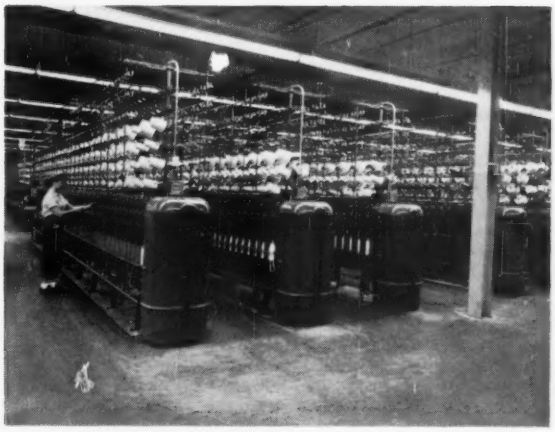
Burling Table

Birch Brothers, Inc. offers a new simplified burling table designed to handled approximately 700 yards of fabric continuously. The machine is floor mounted and equipped with an inclined table driven draw roll and ball bearing guide rolls. The fabric travels down the table to the operator and is then folded into a truck. *For further information write the editors.*

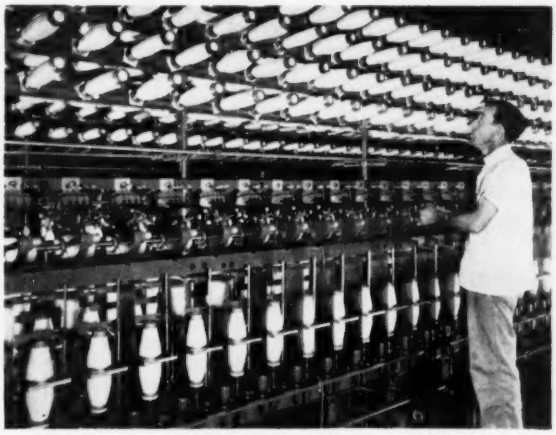
Leesona® Model 10 puts a wonderful twist on any yarn



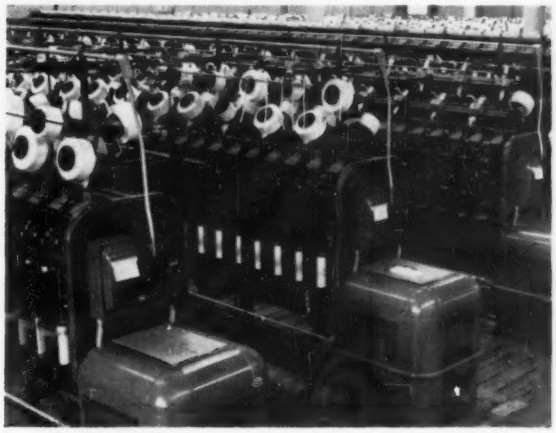
Twisting wool and worsted from spinning bobbins onto taper-top, take-up packages, as supply for winding machines.



Worsted, synthetic and metallic yarns from cones are plied together, twisted and taken up on large packages.



Twisting glass yarn from pirns to double-taper packages which will be used for filling and warping without re-winding.



Twisting Dacron* directly from zero-twist cheeses onto straight wind bobbins for further processing on high speed UNIRAIL® Uptwisters.

The world's best yarns — and all the others too — natural or synthetic — spun or filament can be plied and twisted best on a Leesona Model 10 Ring Twister.

With it you twist single end yarn or combine two to 16 ends, with a twist range of ½ to 55 turns. Automatic stop motion for each end in the ply permits tying knots in singles.

Here's the most versatile of twisting machines ready for any kind of package delivery — cones, cheeses, cakes, pirns, spools, bobbins or tubes. Produces straight wind, taper-top or double tapered take-up packages (filling or warp wind).

For more facts and figures write for Leesona Model 10 Ring Twister Bulletin 10-A.

*Dacron is a DuPont registered trademark.

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23.7.6

Machinery Maker

(Continued from Page 35)

Sparked by this energetic drive, consumption of seamless stockings began slowly to climb from a position of zero on the industry's sales graphs to the point where they accounted for eight per cent of stockings sold. At this point they levelled off for a while. The hosiery business generally went into a slump during 1949 to 1952. There were just too many producers turning out stockings, and soon women's hosiery became well known as one of the more painfully distressed areas of textiles. Scott & Williams gave up its expensive promotional campaign, but not for a moment did the company abate its driving effort to improve its KN machine so that it would be able to turn out still better seamless stockings. Soon, out of this effort, came a significant new development, an automatic tensioning device. Added to the KN machine, the device permits maximum nonstop production and maintains constant knitting tension to produce a substantially improved nylon.

Aided greatly by this device, the seed of seamless acceptance began to blossom strongly among women—much to the surprise of many in the industry. Soon the popularity of seamless began to really snowball. The big rush was on. Stores could not get enough seamless stockings to meet the demand of women wanting this smart new style on their legs. Store buyers would say to mill salesmen: "I'll give you an order for full-fashioned stockings if you ship me a few hundred dozen of seamless."

Anxious to keep up with demand, hosiery manufacturers ran around like crazy to latch on to a few seamless machines. But the supply was limited. Orders poured in on Scott & Williams and soon the company was having to tell customers that deliveries of the new KN machines, as the latest model was called, would require a year to 18 months' delay.

This tremendous success of seamless stockings and Scott & Williams' machines did not, however, slow the company's efforts to improve these knitters still more. Recently it announced the development of another attachment which enables its machines to produce stockings of equal *predetermined* lengths. The new device represents a major gain in stocking knitting technology. Until it was introduced circular knitting machines produced women's seamless stockings in various undetermined lengths. This was due to the special wind-up and also to the various types of nylon yarn used as well as changes in humidity and other variable factors.

The new length control attachment virtually eliminates this length variance. It permits manufacturers to control the length of stockings as they are knitted by the KN machine. The effectiveness of the attachment was forcibly demonstrated by a recent check made by Scott & Williams. It showed that 99.75% of the entire finished production of several thousand KN machines did not vary beyond one-half inch from the predetermined length. Most of them varied only within a quarter of an inch.

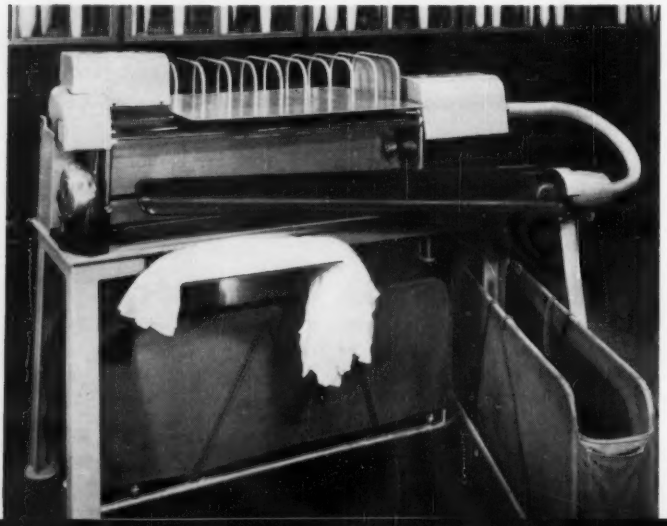
Today seamless nylons are running about 35% of the total production of women's stockings. Scott & Williams has a big backlog of unfilled orders, and the trend toward seamless moves forward unabated. This story of one company's courageous faith in the ability of its machines to make a better stocking has a moral, of course. The moral is a complex one and can be expressed somewhat like this: even a textile machinery manufacturer can benefit from promoting a new product to consumers; also, given a new and better looking stocking, women will buy it enthusiastically.

Hosiery Examining Form

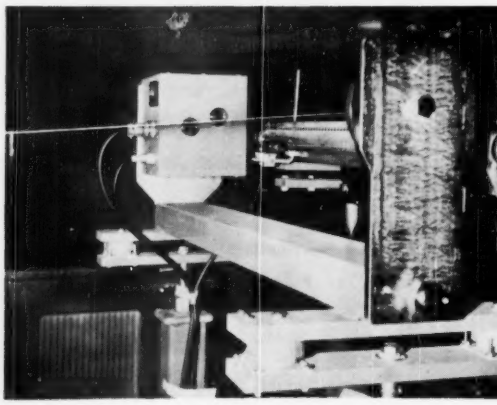
A flat non-expanding examining form for seamless hosiery, the "Reading," has been announced by Textile Machine Works. The equipment is reported ideal for stacking dozen lots in its bin with an automatic release into a stocking carrier underneath the machine. Features of the equipment include: a 48-inch board length to accommodate the longest stocking; automatic operation, turning, and stacking; electronic control using transistor units; self-contained vacuum unit; vacuum applied only during removal operation, and electrically operated stocking counter. The machine, which requires only 25 square feet of floor space, is said to be easily cleaned and maintained. *For further information, write the editors.*

End Break Detector

Lindly & Co. has announced an automatic end break detector for detecting a broken end of yarn in beaming operations. Upon detection, the beamer is stopped automatically. The equipment consists of a highly sensitive photoelectric scanning system. Among the advantages gained by use of the instrument are elimination of conventional drop wires used in beaming operations as well as the maintenance and cleaning necessary to keep a drop wire stop motion functioning properly. *For further information write the editors.*



TMW Hosiery Examining Form



Lindly End Break Detector

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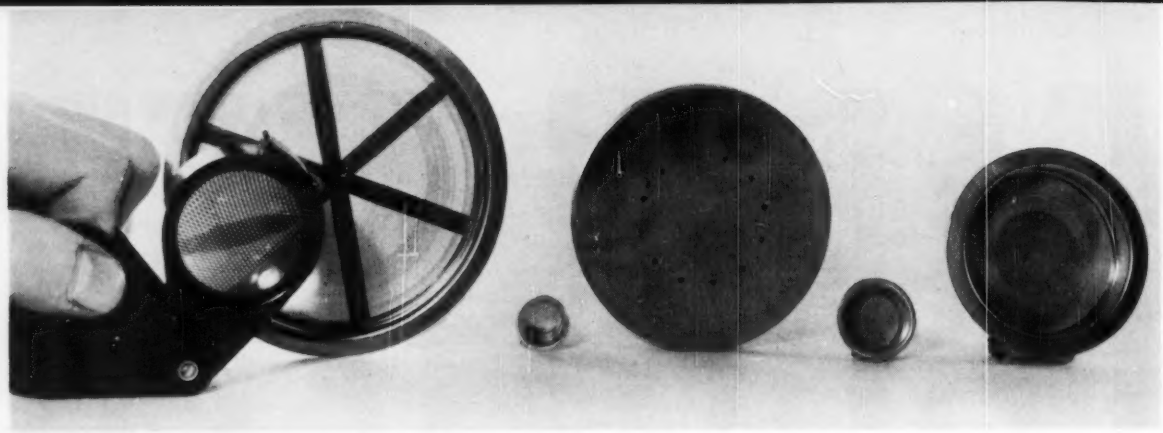


TO SPIN A FINE THREAD—Five typical spinnerettes used in making man-made fibers. The ones on the left and right make staple fiber, the others filament yarns.

We can't do without them

By Lee Levitt

ONE OF THE MOST painstaking and precise metalworking processes in the world underlies the mass production of man-made fibers. This is the manufacture of spinnerettes, the perforated metal cups through which "dope" is extruded into a coagulating bath to form continuous filaments.

Baker & Co., Inc., of Newark, N. J., is the world's largest producer of spinnerettes. The company makes some containing as many as 25,000 holes in an area five inches in diameter. Individually drilled, these holes may be as small as .0015″ in diameter (15/10,000ths of an inch, or half the thickness of a human hair). And these holes must be fabricated with different contours depending upon specific requirements. Hyperbolic and countersunk are two common types. In the case of melt spinning, where discs ranging from ⅛″ to ⅝″ in thickness are required because of the pressure, counterbores are utilized with a cone-shaped base blending into a capillary (straight cylindrical portion of the hole) of the desired length.

Uniformity of individual filaments being a prime requisite, all holes in a given type of spinnerette must be perfectly formed, free of burrs or tool marks, and identical in every respect—in some cases to a tolerance of plus-or-minus one mircon (.00003937″, or approximately 4/100,000ths of an inch), if so specified. The inner walls must be mirror-smooth; contours must be perfect; the hole edges must be sharp and perfectly round.

In many types of yarn the length of the capillary section determines to a great extent the ultimate characteristics of the filaments. Thus the dimensions of this section must be controlled with utmost precision. Each hole is inspected and measured under a microscope. The spinnerette would be rejected if one hole were bad, even though 24,999 others were perfect.

Development of a satisfactory spinnerette was a real problem in the early days of man-made fibers. One of the first techniques tried was the insertion of round platinum wires of known dimensions into molten glass; after cooling, the glass was immersed in aqua regia, which dissolved the platinum leaving round holes. Another technique was to draw down glass tubes and carefully fracture them at the proper hole diameters. But the difficulty of binding these tubes together in a leakproof unit proved insurmountable. Eventually, the infant industry settled upon drilled metal cups. Later—with the advent of the true synthetics which required greater stock thicknesses—flat metal disc spinnerettes were developed.

As the world's leading refiner and worker of precious metals, Baker & Co., Inc., was drawn into the spinnerette field soon after World War I, as it became apparent that precious metals were required for many spinnerettes due to the corrosive nature of the coagulating baths used for some fibers. The company developed a gold-platinum alloy, a palladium-gold composition, and later a platinum-rhodium alloy especially to meet this requirement. At the same time, it worked out techniques for shaping the cups and drilling the holes. Thus it became involved in the spinnerette business as a whole, and soon began producing stainless steel as well as precious metal units. Many improvements have been introduced since—the Ultra-Flo spinnerette, for example, in which added refinements were made in the hole and surface finish.

The precision characteristic of spinnerette manufacture begins with preparation of the metal from which they are made. The composition of the precious-metal alloys is controlled spectrographically, by assay, and metallographically, because impurities or poor grain structure will affect the quality of the holes. The specifications for spinnerette metal are so strict as to take them out of the class of "commercial" metals entirely—they more nearly resemble laboratory-produced materials.

More than half the 1.8 billion pounds of man-made yarn produced each year in the U.S. are formed through precious metal alloys, the rest through stainless steel. Due to variations in chemistry, pressure, and other process characteristics, each of the 25 or more different types of fiber requires a spinnerette different in some respect from those required for the others.

Baker & Co., Inc., is one of the Engelhard Industries, an international group of companies manufacturing thousands of different products, most of them involving precious metals in some way. ■

Europe

(Continued from Page 44)

ings of both sides later when he said: "These contracts are based on moral values—openness instead of secrecy, trust instead of espionage, mutual aid instead of strife, solidarity instead of reciprocal antagonism."

Hit US Tariff Policy—Belgian flax manufacturers, after learning of the Tariff Commission's decision to boost "linen toweling" duty from 10 to 40% are protesting "the effects of a measure which is so little in keeping with the usual free trade policy of our American friends. What is happening today in linen cloths might easily be the fate tomorrow of other branches of the industry."

Finnish Nylon Plant—Finland will be able to produce 8.5 million pairs of nylon hose annually—instead of 5 million as at present—when a new plant goes into operation early next year. It should mean an end to annual imports of one million pair.

Perlon Mark Changed—The trade name Perlon may now be used if 20% of the weight of the material is in this polyamide fiber, according to the Perlon Trade Mark Association. The former level had been 15%. The group hoped to get general acceptance of the new stricter rule in time for the 1958 Spring and Summer collections. An early change to new rule was especially important for blend manufacturers who wished to use Perlon promotion tag. However, German textile trade is refusing to accept new rule which, it is felt, has come too quickly.

Women's Working Hours Protested—In Germany, the Textile and Clothing Trade Union has demanded an end to night work for women and is seeking "breaks" of 10 minutes per working-hour instead of the present five minutes. This could cut into West German productivity as it is unlikely such changes could be made without affecting either output or costs.

New Nylon Uses—A British brick factory, near Exeter, after lengthy trials is now using nylon for conveyors which take the clay from feed hoppers to presses. The new chutes are smoother and there have been fewer stoppages. They are proving more durable than the old tarred canvas chutes. . . .The London National Gallery is studying the possibility of relining paintings with nylon. It is hoped that such treatment will mean that a painting will no longer require periodic treatment with linen which rots and can affect the art work.

Austria Prepares For Rainy Day—Austria is now producing some 100 million pounds of cellulosic fibers annually. About one-third of the cloth produced is going into umbrella fabrics, mainly viscose and acetate.

Therapeutic Nylon Stockings

Elastic stockings for women, made of Helanca yarn combined with nylon-covered rubber in an exclusive patented process, have been introduced by Johnson & Johnson, surgical products manufacturer. The stockings, full-fashioned and full-footed, are said to be 20% lighter than any other elastic hosiery on the market. *For further information write the editors.*

REPORT FROM JAPAN

Rising textile exports help Japanese economy

By B. Mori

OSAKA.—The textile export picture is one of the brightest spots in Japan's economy right now. Available data indicate that shipments should remain high through first quarter of 1958. Even though the Government's economic planners are de-emphasizing textiles in their long-range outlook, better sales right now are welcomed, in the effort to bring Japan's foreign exchange account into a healthier position.

Export Trade Doing Well—It is clear by now that the nation's export trade during current fiscal year will be at a new post-war high, within a shadow of the three billion dollar level, as measured by Government validations of export contracts (i.e., licenses to ship goods either nearby or future). Such validations were up 19.4% in the first half of the fiscal year (April through September), as compared with the same six months in 1956. Validations for textile exports in that same period were up 24.8%, a much-better-than-average showing.

Rayon, Silk Fabrics Exports Higher—Figures for actual export shipments of textiles during nine months through September show some startling gains, with silk fabrics and spun rayon items leading field with gains of around 40%. Wool fabrics were up 30% and cottons and filament rayons up 20%. Here are actual figures as reported by Japan's Finance Ministry:

	Unit (Millions)	Total 1956	Nine Months 1956	Nine Months 1957
Rayon Filament Yarn	Pounds	18	13	18
Rayon Filament Fabric	Sq. Yds.	445	230	281
Rayon Staple Fiber	Pounds	8	5	20
Spun Rayon Yarn	Pounds	34	24	34
Spun Rayon Fabric	Sq. Yds.	674	471	653
Silk Fabrics	Sq. Yds.	46	31	44
Cotton Fabrics	Sq. Yds.	1,250	885	1,070
Wool Fabrics	Sq. Yds.	22	14	18

Increased Synthetics Output Expected—As a side effect of the much-publicized reduction in raw cotton imports, it appears likely that mills will spin more rayon and synthetic staples, either alone or in mixtures, in next six to nine months. Cotton mills have been operating at or near record-high levels for some months, but have had to slow down recently to permit liquidation of inventory in producer and distributor channels.

The Government's raw cotton import policy for remainder of this fiscal year would seem to involve continuation of this lower rate of cotton consumption at mills—a situation which pleases mill operators not at all. Most cotton spindles are owned by big spinner-weavers who also have interests in silk, wool and man-made fibers. What could be more natural than, in an effort to prevent an uneconomic slow-down and subsequent probable resumption of cotton yarn production, they should turn to mixtures and synthetic fibers in place of pure cotton—at least temporarily.

To those who are exclusively "cotton-minded" this is something of a disaster. To others, this seems to be playing along with Government's long-term hopes for conversion to man-made fibers.

Pulp Imports Rise—Imports of rayon pulp have been running far ahead of schedule, and will probably come down sharply. Figures for first nine months of 1957 total 110,000 metric tons, compared with 86,000 tons in same period of 1956 . . . Domestic pulp makers are watching with some interest a joint Japanese-Indian project to build pulp mills in India, using bamboo as raw material.

More Polyesters for Japan—Terylene will have a competitor in Japan. The Government has approved a contract whereby Kawasaki Chemical Industry Co., Ltd., will manufacture necessary raw materials, and Teikoku Rayon Co., Ltd., will produce a polyester fiber under license from the West German Henckel interests.

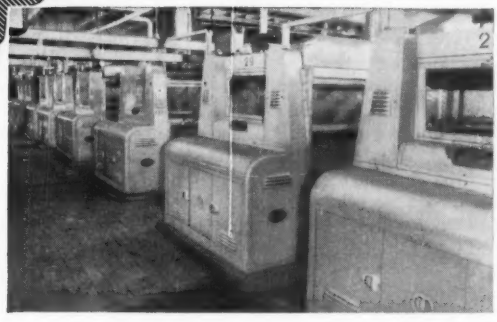
England

'NELSON' does it again

Large installation of 'NELSON' rayon spinning machines now ordered by CELULOSA Y DERIVADOS MONTERREY MEXICO

and FINLAND orders additional machines

Finland



Italy

Compact and labour saving, simple to operate, easy to maintain—'NELSON' machines are proving themselves daily as the world's finest continuous spinners.

'NELSON' RAYON SPINNING MACHINES ARE SPINNING EXTENSIVELY IN ENGLAND AND IN ELEVEN RAYON PRODUCING COUNTRIES ABROAD

PATENTS. The "Nelson" rayon continuous spinning machine and process are protected by patents granted to Messrs. Lustrafil Limited, from whom Messrs. Dobson & Barlow Ltd. have exclusive manufacturing rights.

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MARKETING THE FULL RANGE OF VISCOSE RAYON MACHINERY MANUFACTURED BY DOBSON & BARLOW LTD. BOLTON, ENGLAND

Otis C. Stanton

A younger brother of Seabury Stanton, Otis is vice president in charge of synthetic sales working under Linsley V. Dodge who, as vice president for merchandising, supervises all sales activities from Berkshire Hathaway's New York office.

Berkshire Hathaway

(Continued from Page 33)

merchandising, James Stanton became "treasurer" of Hathaway in 1909, a title conferred on the chief executive officer in those days. He served as managing head of Hathaway until he relinquished this post in 1934 to his elder son, Seabury Stanton.

Born and raised in New Bedford, educated at Harvard, Seabury Stanton's first textile job was in the old City Mill in New Bedford. After military service in World War I, he returned to his home, his wife and baby in New Bedford, thinking to loaf for a few weeks and look around for a promising job.

But, as he recalls it now, he was scarcely out of his uniform when there was his father, dropped in on the way home from the mill, mentioning that there was a vacancy for a bookkeeper at Hathaway and asking if he wanted the job. Seabury protested that he knew nothing about bookkeeping.

The elder Stanton brushed aside this objection as inconsequential. The previous bookkeeper, he explained, had been fired for embezzlement and the books were a terrible mess. In spite of his total ignorance of the art, his son could not make the books any worse than they were; and aided by his Harvard education, he would soon be able to put them in shape, the father said.

Learned about Money Management

Seabury indeed found the books in a frightful condition. By the time he had them straightened out, he had learned a good deal about bookkeeping and mill financial management generally—knowledge, he now admits, that has proven valuable to him over the years. Working in the mill offices in New Bedford under his father, Seabury Stanton proved himself in time to be cast in the same New England mold as James Stanton. Taking over increasing responsibilities as the years passed and his father's health declined, he and his younger brother, Otis, gradually became the men in charge at Hathaway. In 1932, Seabury became chief executive, assuming the title of treasurer his father had held for so long. The elder Stanton retired in 1934.

Those years of the 'twenties during which Seabury and Otis Stanton learned how to run a big cotton manufacturing operation were indeed a hard school. The times were darkened by the virtual disintegration of the once profitable and tremendous textile activity of New England. Unable to compete with the lower cost, lower wage and youthfully aggressive cotton industry of the Southern states, New England cotton manufacturing was strewn with mill liquidations and shifts to the South. Between 1925 and 1934, active spindles in New England dropped from 14 to 7 million.

Decision to Modernize

The troubles of New England textiles did not pass Hathaway by. Indeed in the early 'thirties, with conditions made suddenly worse by the world-wide depression, the owners of Hathaway seriously weighed the advantages of liquidating before things grew worse. But Seabury and Otis Stanton, in active charge of the mill, had more courageous and optimistic ideas. They were convinced that modernization and a concentration on a few staple weaves instead of a broad range of fancy goods hitherto made could make Hathaway profitable once more. They were willing to back their convictions with every cent they could scrape together. In a purchase of stock from Thomas Hathaway, the son of one of the founders, the Stanton brothers acquired control of the company. They set out boldly to put their ideas of modern production and modern merchandising into operation.

In a very basic sense, the program of modernization and redirection on which the Stantons launched Hathaway in 1934 resembles the current program which the same two men and their associates are opening for Berkshire Hathaway today. History repeats itself, but with the difference, of course, that the new program is for a company far larger than Hathaway in 1934, and hence the task of successful guidance is more difficult and complicated.

In another way, too, there is a curious resemblance, as it were, by opposites. In 1934, the need to survive in the face of an unfavorable situation for Hathaway in relation to lower-cost Southern competition presented itself to the Stantons as a need to shift Hathaway from its former reliance on a diversity of fine cotton cloths into concentration on staples such as clip spot marquisettes and, later, rayon lining fabrics. So today the plans for Berkshire Hathaway's future, as envisaged by Seabury Stanton, call for a return to a diversified line including, of course, such staples as linings, but broadened, in addition, to take in a wide range of combed yarn dyed goods and an unlimited variety of blended fabrics in which Dacron and other new man-made fibers will be extremely important.

The program of modernization begun in the early 'thirties—their "five year plan" as Seabury and Otis called it—proved successful. Its success, however, was brought about by much hard thinking, and years of arduous work with scrupulous attention to see that every dollar for new machinery was spent to the utmost advantage. To make their scarce dollars stretch as far as possible the Stantons concentrated first on modernizing their rayon departments. For with rayon it was not necessary to invest in cards, spindles and other expensive yarn manufacturing equipment.

Hathaway's strong movement into rayons was helped greatly by the development at that time of the Draper XK loom of which the company was one of the earliest to invest in heavily. These and the subsequent XD looms acquired in large numbers were first used on pigment taffetas. Later, as workers gained skill in weaving rayon, Hathaway moved into rayon lining twills. In time Hathaway became the largest producer of these fabrics, a development that was aided by the introduction in 1939 of Industrial Rayon Corp.'s continuous process rayon yarn.

In the late 'thirties, when the modernization of rayon weaving was well advanced and productive of needed earnings, Seabury Stanton got started in a program aimed at bringing up to date Hathaway's cotton fabric production. Working with Crompton & Knowles engineers, Hathaway people became interested in the high speed capacities of the new C & K "C-6" looms. Convinced that these looms would be advantageous when used on clip spot marquisettes, then Hathaway's leading cotton staple, the company bought 626. Next, to support its modernization of cotton weaving, Hathaway began to modernize its yarn preparatory equipment. By 1942, modernization of opening, picking, carding and spinning departments was virtually completed with Whitin super-draft frames replacing former roving equipment.

On the foundation of this "operation boot-strap" modernization in the 'thirties and improved steadily since then, Hathaway remained a competitive, profit-earning company in spite of the difficulties that have returned to plague virtually all textile manufacturing, north and south in the last several years.

That Hathaway has managed to earn profits all these years is in large part owed to the remarkable abilities of Seabury Stanton. He has literally devoted his life to building up his company, and in maintaining it in his native city of New Bedford as one of America's outstanding textile manufacturing operations. This he has achieved in the face of an almost uninterrupted series of staggering problems and enormous difficulties—an economic climate in his beloved New England that has been increasingly adverse to textiles since the day he went to work as a mill bookkeeper.

What Makes Him Successful

How has he managed to do it? Those who know him best and longest say by hard work, by a sustained laborious effort of which few men are capable. He has been all his life, his friends say, a millman who believes his place is in his mill every day from seven in the morning to seven at night. But an ability to devote oneself unsparingly to one's job is not the only answer—or every drudge killing himself with work would be a great man. Along with his ability to work hard, Stanton possesses great business acumen—he knows how to make the right decisions at the right time as witness the decision made by him and his brother Otis when in 1934 they decided boldly to go ahead and find the means somehow of modernizing Hathaway when others with stock in the company were urging liquidation.

Another of these crucial decisions which reveal the incorrigible man of action, who lives by achieving, by responding daringly to great challenges, was made in 1955. Once more the shifting fortunes of textile manufacturing brought Hathaway to a point where, Stanton realized, a giant forward step was necessary for continued survival. Heavy volume production of low-profit-margin fabrics by a mill not big when compared with such new textile leviathans as Burlington, Stevens or Milliken, would no longer be satisfactory, Stanton saw.

KEEPS WHEELS TURNING—William H. Potter is vice president in charge of operations of the newly reorganized Berkshire Hathaway. He is 45. As part of the reorganization, a number of older men have retired. These include John H. McMahon, formerly chairman of the board; vice presidents Manlio Frova, Thomas J. Kennedy and Thomas F. Tansey; assistant treasurer Edward H. Arnold.

There was a need to grow larger and diversify. In Berkshire, he found a management faced with the same need, and so the merger was arranged. In bringing about the marriage of two strong, and respected old New England textile operations, Seabury Stanton, has many reasons for a sense of personal gratification. Not the least of these is the fact that the merger represents a significant renewal of vitality for the textile industry in New England.

A New Englander, a man by upbringing a product of the great days of New England's textile industry, Seabury Stanton is willing to put the past behind him and out of mind. He sees in such companies as the reborn and rejuvenated Berkshire Hathaway, a new chapter opening for textiles in New England. No longer the all-embracing dominant industry of the region, he views textiles, nevertheless, as an important segment of the New England economy, but sharing with many other industries the burden of maintaining New England's prosperity.

There is no good reason, in his opinion, why a textile operation cannot prosper in New England. There is in New England a valuable residue of traditional textile skills among the workers, and, suprisingly, a returning respect for mill work. Wage differentials that once heavily favored the south are rapidly leveling out; organized labor in New England textiles is increasingly coming to realize that its continued cooperation is necessary if textiles are to survive as a source of jobs in the area.

In Stanton's opinion, the time for a textile mill to move South has passed. Today, he says, a mill in New England either has to put itself in a shape that will enable it to earn money or it must liquidate. The cost of moving South, of building a new plant and equipping it, of acquiring and training new workers, is prohibitive.

Stanton is confident that remaining very much in New England, the new Berkshire Hathaway

(Continued on Page 60)

NEW FABRICS

NEW YARNS

Cotton Curtain Prints

Indian Head Mills has introduced a new line of curtain prints, 35/36 inches wide, on soft-filled sheetings, designed both for curtain manufacturers and over-the-counter piece goods sales. Tradenamed Curtina Cotton, the manufacturer reports the prints are money-back guaranteed against running, fading or more than 2% shrinkage. The retail price for over-the-counter sales will be in the 69 to 79-cent range. For curtain manufacturers the goods are priced in the high 30-cent brackets, depending on patterns. *For further information write the editors.*

Improved Cotton Pick Sack

A new cotton pick sack which has a plastic reinforcement applied by an exclusive process has been brought out by Bemis Brothers. Called the Dura-Dot because of the application of tough plastic "dots" to the dragging surface of the sacks, the new product was developed after four years of research as part of the manufacturer's efforts to eliminate or minimize the tar-spot problem in handling raw cotton. *For further information write the editors.*

New Dynel-Rayon Fabrics

Dynel, the acrylic fiber of Union Carbide Corp., made its appearance last month in a range of apparel fabrics combined with rayon. Introduced by Greenwood Mills, the new fabrics tradenamed "Bondyne," are said to be a "controlled" blend of the two fibers and are imparted easy care properties by a heat setting process which utilizes Dynels thermoplasticity.

Apparel made with the new fabrics is said to hold its press and keep a neat appearance longer than conventional rayon or rayon blend cloths. Greenwood is currently offering Bondyne fabrics in flannels, gabardines, sheens, sateens, poplins, tropicals and challis. For slack fabrics, considered to be an early major use of the new blend, prices are said to range from 65 to 85 cents a yard, depending upon the types of finishes used.

For further information about these fabrics write the editors.

Trilok Output Expanded

Production capacity for Trilok upholstery fabric has been expanded by 50% it was announced by the Textile Division, United States Rubber Co. The division said the three-dimensional fabric will appear on the 1958 models of three auto manufacturers.

New Orlon Yarn

A Turbo processed Du Pont Orlon yarn, said to have good resistance to pilling, has been announced by Associated Spinners, Inc. Fabrics knitted from the new yarn are said to retain all the qualities of Orlon and require no special knitting or finishing techniques. The yarn is not chemically treated and is available in natural, single and plied as well as dyed, on cones. *For further information write the editors.*

Sleeping Bag-Tent

Julee Comforter Mfg. Co. has placed on the market a combination sleeping bag and tent. The bag is filled with Celanese Celacloud, an acetate fiber fill, and is attached to a tent section of waterproof nylon and pima cotton. The front can be zipped shut. The unit is made in double and single sizes that retail for $44.95 and $29.95, respectively. *For further information write the editors.*

Acrilan Carpet Runners

Firth Industries, Inc., has developed special Acrilan carpet runners for American Airlines "Mercury" service to be used at some 15 major airports. American said the runner was selected because of Acrilan's qualities of durability, soil resistance and color fastness. *For further information write the editors.*

Mylar Laminated Sheeting

Coating Products, Inc., is now producing a "woven" effect in Mylar sheeting. Mylar is a Du Pont polyester film which is metallized by Coating Products and in this application, laminated to 12 gauge vinyl. Perforations in the sheeting run to 240 per square inch, and the wide range of embossing and finishes include gold, silver and copper. *For further information write the editors.*

High-Pile Scatter Rug

Princeton Knitting Mills, Inc., has introduced "Pouff," a lightweight, high-pile 100% acrylic fiber scatter rug. Offered in a full range of pastel colors and in an exclusive finish that won't wash out, according to Princeton, the rug line will be sold direct to retailers. The price range has been set at $5.98 to $10.98. *For further information write the editors.*

Cotton Broadloom

Wunda Weve Carpet Co. has introduced its latest addition to the firm's regular line of cotton broadloom. Called Wunda Rama and woven of 100% cotton, it is the third in a series of new products introduced for this fall's carpet market. Vat dyed and preshrunk, Wunda Rama retails at $9.95 per square yard. *For further information write the editors.*

TDI Dinner-Dance Held

The annual dinner-dance of the Textile Distributors Institute on Nov. 7 at the Plaza Hotel in New York City was attended by over 500 members of the man-made fibers and textiles industries and their wives. Following a reception at which drinks and appetizers were offered, the dinner was served in the Grand Ballroom. There was dancing to two orchestras.

New Sleeping Bag

Seattle Quilt Manufacturing Co., Inc., now has on the market a new lightweight sleeping bag, said to combine for the first time urethane foam and Dacron polyester fiberfill to provide improved insulation and comfort. Beneath the sleeper, a ⅛-inch pad of urethane foam is used over the fiber filling, to increase insulating efficiency and give more comfort by spreading the body weight over a larger area. *For further information write the editors.*

Dacron Blimp Fabric

In a recent test U.S. naval officers evaluated the performance of an anti-submarine patrol blimp with a skin of coated Du Pont Dacron polyester fiber. During four months of trial flights, it was found that the Dacron fabric reduced helium loss to one-half of that in ordinary patrol duty envelopes now used, Du Pont reports. Dacron was selected because of its low-stretch, high-tear strength, higher strength to weight ratio, and resistance to weathering, rot and mildew.

"Authentic" plaids — are they really?

Is THE traditional Scottish tartan a fabric of falsehood? According to legend and the "ould" Highlanders of the whisky and men's-wear ads, the tartans date from antiquity, each pattern being the distinctive mark of a particular clan. But historical evidence, dug up by some English scholars, indicates that most tartans are much more modern than they have been made out to be.

Much of the myth was created by Sir Walter Scott's romantic novels, wherein heroic clansmen recognized each other by the patterns, or *tartans*, of their *plaids*. These original Highland garments were made up of some 6 by 12 feet of heavy home-spun, wrapped first about the waist to make the precursor of the modern kilt, with the rest draped over the shoulders as a half-cloak, which is called the "plaid" in the modern costume.

Historians say that tartans worn in the old days had more to do with the favorite style of a local weaver than with clan affiliations. Except for no more than a half-dozen clans, a man wore whatever tartan pleased him, even changing tartans from day to day if he was prosperous enough to own more than one garment. Moreover, it wasn't a good idea to be easily recognizable in the Highland heyday, what with constant feuds between clans, and the popular occupation of cattle and sheep rustling.

Since the 16th century, when tartans were first reported, clan affiliations have changed frequently. One proof is old family portraits, wherein doughty Scottish ancestors often wear tartans different from those associated with their clans today—and sometimes two different tartans at once, to the consternation of present-day purists.

Around the end of the 18th century, it became stylish to have an old Highland outlaw or two in the family, and even the English, led by King George IV, took to wearing tartans. Scott's books provided glamour, and crack Scottish troops won official sanction for their regimental tartans.

Canny cloth weavers abetted fashion, and tartans began to originate for every clan—in historical retroaction—spreading throughout the Empire, and even to the United States, where the Scottish tartan today is more fashionable than ever.

THREE VICE PRESIDENTS—Henry S. Newcombe, left, is in charge of cotton purchasing; Edmund Rigby, center, is treasurer and clerk; John J. McMahon, right, handles finishing and co-ordination with sales. Seabury Stanton, of course, is president, and also serves as chairman of the executive committee. Malcolm G. Chase, Jr., is chairman of the board.

Berkshire Hathaway

(Continued from Page 57)

operation, streamlined and modernized as it is, will prove itself successful, and set an example that may lead in time to a restoration of textiles in New England.

How does the new Berkshire Hathaway shape up? The man closest to the picture, perhaps, is William H. Potter, Vice President in charge of operations. Hard-working, cheerfully energetic Bill Potter, a millman down to the marrow of his tireless bones, reports the picture this way: As of the first of this year, the company operated the big Hathaway mill in New Bedford plus the following mills that were formerly part of Berkshire Fine Spinning Associates—Berkshire No. 3 and 4 in Adams, Mass.; Greylock in North Adams; Valley Falls in Albion, R. I.; Holyoke yarn mill in Holyoke, Mass.; Fort Dummer, Brattleboro, Vt.; Coventry, Anthony, R. I.; King Philip A, B, and E Mills as well as Bourne Mill (acquired in 1956) all in Fall River, Mass.; King Philip D Mills in Warren, R. I.; King Philip Finishing Co., Lonsdale, R. I.; two curtain factories, one in Fall River and the other in Warren, R. I.; a big machine shop in Warren.

After a year of consolidation and shifting of machinery along with much installation of new equipment, Berkshire Hathaway will have in operation next month: Berkshire No. 4 with 112,036 spindles and 2,104 looms; Valley Falls with 65,952 spindles and 1,444 looms Coventry with 59,584 spindles and 872 looms; King Philip A, D, and E mills with 215,-832 spindles and 4,950 looms; Hathaway A and B Mills with 56,636 spindles and 3,500 looms; Bourne with 84,192 spindles and 1,842 looms. In addition to these mills in operation, Fort Dummer and King Philip B mills with 83,136 spindles and 1,668 looms will be held on a stand-by basis in case their production is needed.

What kind of fabrics will be produced? Since diversity was one of the prime reasons for the Berkshire Hathaway merger, the range of cloths turned out will be broad. Among cottons, there will be a host of fine combed goods including lawns, voiles, dimities, broadcloths, combed yarn colored box loom fabrics and combed and carded sateens. Synthetics will include, of course, the great Hathaway item of rayon lining twills in a wide variety of plain and dobby effects. There will also be Dacron and nylon marquisettes for curtains and other uses as well as an increasing output of rayon-Dacron and cotton-Dacron blends and other synthetic combinations using Arnel and the acrylics if management sees a market for them.

Summing up the achievements of the past 11 months' modernization, Potter says that Berkshire Hathaway will have modern blending practices with single process picking throughout the entire operation. Combing will be modern with either Whitin or Saco-Lowell equipment. Drawing has been drastically updated with two and three process roving cleaned out and single process drawing substituted. Spinning is now 100% long draft, while spooling and warping utilizes Barber-Colman equipment throughout. Slashing has also been greatly improved with Uxbridge slashers installed in every plant.

Throughout the many weave rooms, the best looms have been taken and relocated for maximum efficiency while non-competitive looms have been junked. In cloth rooms modern shears, trimmers and inspection machines have been installed. In all mills now operating, humidification has been renovated with a great deal of new equipment installed.

What all this modernization and consolidating and re-equipping adds up to, Bill Potter says tersely is this: "reductions in cost have been substantial—in the future we should be able to operate at profit."

Profitable operation is also confidently expected by Seabury Stanton. In spite of the slackness of the textile market today with its unrewarding prices, he sees an era coming for textiles with good potential for profitable business. "We are now close," he says, "to balancing supply and demand in textiles. Demand at present for cottons equals roughly the output of a five-day three-shift operation. When mills run six days, they produce too much. But with increasing population and a decreasing number of mills as marginal outfits disappear, demand can be expected soon to catch up with supply close enough to increase the chances of better profits for those mills that do not allow themselves to fall behind in productive efficiency so as to become marginal producers."

Seabury Stanton intends to see that Berkshire Hathaway does not fall behind. ■

Many strange fibers are "meeting on the frames" today, as new developments continually increase the number and variety of synthetics and blends.

Controlling these new fibers and filaments in spinning or twisting can be tricky business. And you seldom have much time to experiment. Let Victor *experience* take the place of costly trial-and-error.

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Cleghorn Named National Aniline Head

Albert E. Cleghorn has been appointed president of the National Aniline Division of Allied Chemical & Dye Corp. He succeeds Donald E. Rogers who retired after 42 years of service with Allied and predecessor companies. Cleghorn joined Allied Chemical in 1933 and in 1952 went to the National Aniline Division, serving as assistant to the president, vice president and since 1954 as executive vice president.

Albert E. Cleghorn

Born in Hot Springs, S. D., Cleghorn attended Wesleyan University in Middletown, Conn., and received a B.S. degree in Chemical Engineering from Brooklyn Polytechnic Institute in 1928. Following graduation, he taught in the department of chemistry at Long Island University and later was a member of the operating staff of Foster D. Snell, Inc. He lives in Scarsdale, N. Y.

Expand Caprolactam Plant

Allied Chemical & Dye Corp. is doubling capacity of its caprolactam plant at Hopewell, Va., to 60 million pounds annually. Best known as the monomer for nylon 6, caprolactam is sold to producers of synthetic fibers and molding polymers for injection molding and extrusion. Allied Chemical also uses it to make its own new textile fiber, Caprolan.

"Ordered Polymer" Research Begun

Celanese Corp. of America has begun operation of a new polyolefin pilot research laboratory designed to step up investigation of the possibilities of creating new tailored-to-order plastics and fibers to meet specific needs in home and industry. The predesigned plastic molecules are known as "ordered polymers." Their development is considered by Celanese as a scientific milestone. The pilot unit is located at the firm's Central Research Laboratories at Summit, N. J.

The greater capabilities of ordered polymers, such as olefins, stem from the fact that their linear, more closely knit structure can raise the limits of their strength, rigidity and heat resistance far above those of currently-known plastics, according to Celanese. Although results of the new research under way cannot be predicted, such possibilities as use of the new materials in milk bottles, auto bodies, tire cord, house wall panels and skyscraper curtain walls have been suggested. Celanese has been producing an ordered polymer, known as Fortiflex, since last February. Some Fortiflex housewares, toys and monofilaments are now beginning to appear on the market.

Stain Repellent Use Gains

The stain-repellent fluorochemical finish manufactured by Minnesota Mining & Manufacturing Co. under the trade name "Scotchgard" can now be applied by commission finishers. This development was made known in New York last month by R. M. Adams, sales manager for the finish, at a demonstration of its use in repelling both oil and water-borne stains on women's wool suits. Mr. Adams also revealed that:

The finish can be applied by padding and other standard finishing methods.

It is now being successfully used on upholstery materials, including cottons, and it is durable through at least five drycleanings.

Finishers who apply Scotchgard on a commission basis will be expected to meet performance standards set by Minnesota Mining & Manufacturing.

Research is continuing to adapt the finish for use on wash-and-wear fabrics, and it is expected that eventually the finish will be proven practicable for this purpose.

New Water-Soluble Resins

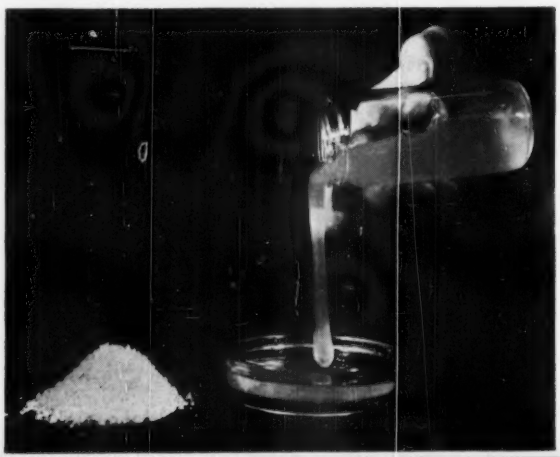
Expected to find a major use as a warp size for cotton and synthetic yarns, a new class of water-soluble resins has been introduced by Union Carbide Chemicals Co., a division of Union Carbide Corp. The new resins, trademarked "Polyox", are said to be exceptionally high molecular weight polymers of ethylene oxide.

Carbide is now producing the new resins in a pilot plant unit at South Charleston, W. Va. in semi-commercial qualities. Substantial commercial production is scheduled for early 1958, and plans are being formulated for a large-scale unit to be completed in 1960.

To date, major emphasis has been on use of the new resins as a warp size for cottons and synthetic yarns. Their properties also suggest use as thickening agents in print paste and backing compounds, as binders in non-woven fabrics, and in non-durable anti-static agents.

The resins are white granular materials which are completely soluble in water at low concentrations and form films said to be tough and flexible. These films coat yarns evenly and exhibit good adhesive properties. Because of their toughness, they resist abrasion during weaving, and their pliability results in resistance to shedding and cracking.

The new resins are marked by a lack of biological oxygen demand (BOD). This property is of particular interest in the light of the growing attention being given the problem of stream pollution, and resultant pressure on texitle mills to cut down on mill effluent with appreciable BOD.



THICKER THAN WATER—One half ounce of ethylene oxide resin shown on left in dry state when dissolved in one pint of water yields viscose solution being poured from jar.

PAPERS OF THE
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TEXTILE TECHNOLOGY INC.®

AATT

New yarns widen fabric horizons

By Fred W. Noechel
ALLIED CHEMICAL & DYE CORP.

"Texturizing", rapidly broadening in scope, opens unlimited vistas for yarn variation

THE YARNS described in this report are distinctive because they have characteristics that are entirely their own. These yarns are truly new ones and not merely the same old yarns achieved through the use of a new man-made fiber. These are distinctive new yarns for the fabrics of tomorrow because they present an exciting challenge to every fabric designer and textile technologist in terms of fabric construction, surface effects and serviceability.

We have known about texturized filament yarns for more than a quarter century. Until recently texturization was limited to fine yarns which had their major applications in knitted goods and foundation garments. Some of these limitations were removed last year after Allied Chemical's introduction of Caprolan heavy yarns with their parallel filament arrangement and ready workability with heat.

Now, potentialities of texturized yarns of Caprolan and other polyamides are large indeed. In preliminary work which has been done during the past 18 months encouraging results have been achieved in such diversified applications as floor coverings, decorative fabrics, outerwear, cordage and industrial fabrics. The number of new yarns possible through use of the most modern texturization techniques is so large that it is difficult for us to believe there is any significant area in the textile industry where they will not find beneficial application.

As an example, considering Caprolan alone, one comes up with a possible number of new and untried yarns that really staggers the imagination. If one takes nine deniers of Caprolan and multiplies them by seven of the most advanced bulking methods one comes up with 63 new single yarns. Then, if one goes a step further and weighs possibilities in terms of singles, two-ply and three-ply—making certain to eliminate duplications—the number of new and untried yarns now possible becomes 45,759! And remember, we're being selfish and haven't given any thought to the other nylons available. If we also include combinations of Caprolan and nylon 6,6 the number of new yarns possible then exceeds 120,000.

Space will not permit writing here about all the potentialities of these yarns. But I do want to give some good, concrete examples of what can be achieved through the use of these new materials. For the most part, I would like to do it on the basis of a single end use. The one I have chosen for this purpose is carpeting. Whether woven, tufted or knitted, or whether used in homes, public buildings or automobiles, carpets are expected to withstand a lot of abuse; retain their appearance over a long period of time and remain useful for many years. I think if I can demonstrate that texturized yarns of Caprolan can do an outstanding job with so demanding a fabric as carpeting, it will give a good idea of what to expect of these yarns in other end use applications.

For many centuries, carpet yarns have been produced by carding, drawing and spinning relatively short fibers varying in lengths from one-half to eight inches. When textile chemists began to produce functional fibers for the carpet industry they were put in the rather odd position of having to take continuous

Mr. Noechel is manager of fiber product development of the National Aniline Division of Allied Chemical & Dye Corp. A native of Germany, he continued his studies after coming to the United States, at Massachusetts Institute of Technology, Columbia University and Newark College of Engineering. He served with Botany Mills for 22 years as a textile engineer and later was a mill superintendent for Calloway Mills. Subsequently, he was director of research for Goodall-Sanford.

Fred W. Noechel

Presented at Nov. 6th, 1957 meeting.

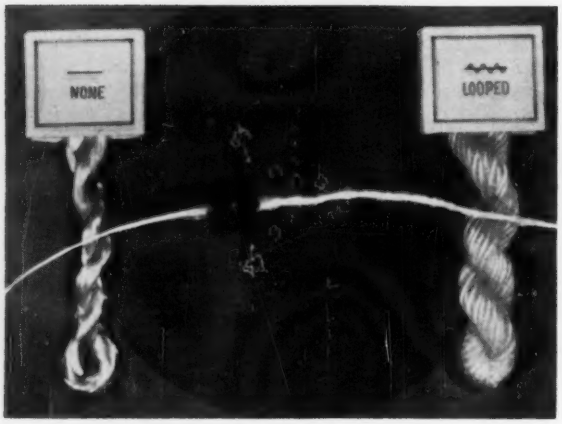


Fig. 1

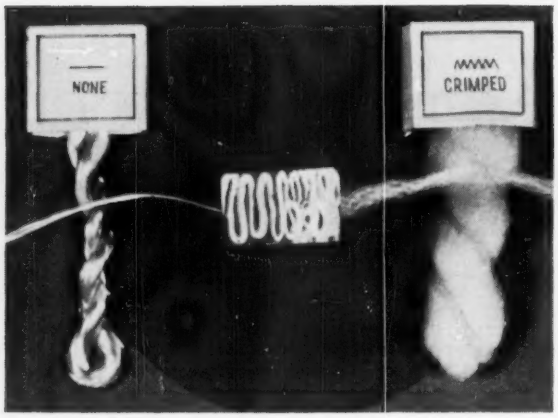


Fig. 2

filament yarn, cut it up into conventional short lengths so that it might go through the time-honored but complicated process of producing a spun yarn. For instance, it was only natural for cotton spinners to process those fiber lengths which could be spun on their equipment without too much modification. Due to limitations on ratch settings, cotton spinners could not use staple which exceeded one-and-a-half inches. Such short staple quickly proved unsatisfactory for floor coverings because the short fibers had a tendency to be pulled out of the yarn assembly and migrate, which caused excessive shedding and fuzzing. In order to lock these fibers in, high amounts of twist had to be used. But these high twist yarns were lean, gave little cover and made it necessary to use a large amount of pile yarn per square yard of carpet.

By means of technological progress cotton spinners were able to spin three-inch staple into yarns which gave much better results. These proved fairly satisfactory in the weaker fibers; since, if they migrated, they would be worn off before any serious entanglement or pilling could result. Beyond that, one ended up with a yarn that was pretty fundamental in character.

The carpet industry has known for a long time that, in the average consumer's opinion, a carpet should be long-wearing; be provided in colors and patterns they want; have enough resilience to give a feeling of luxury at any price; be easy to clean and be able to withstand the onslaught of the normal wear of family living.

Through experience with all kinds of fibers, the carpet industry has come to realize that of all fibers now available, nylon is probably the most ideally suited for carpet use. In their 100% form, the applicable members of the polyamide family have excellent abrasion resistance; a high amount of resilience; are easy to clean and, in the case of our own Caprolan, are easy to dye to colors of striking depth and brilliance.

However, in this particular end use, the very durability of spun nylon creates a problem of bearding and pilling. Let us consider, for example, a typical nylon yarn used in tufted nylon carpets. Such a yarn is spun often from 15 denier, three inch staple. Since the three inch lengths of the fiber are in random arrangement, it is not surprising to find that many of the loose ends tend to stick out of the tufts. There are millions of these ends in an average piece of broadloom, and these are the whole cause of fiber migration, pilling and shedding. If the fiber is not secured to the backing, it may be drawn out by the vacuum cleaner or may work its way out as a result of traffic. Since the fiber is too strong to break readily it migrates to adjoining tufts to create conditions of bearding and pilling.

How do we overcome this situation? We think a good answer is found in texturized yarns of Caprolan. If we examine a piece of fine carpet made from nylon staple we find a host of tiny filaments raised above the surface. But when such carpet is made of texturized yarn, the filaments are continuous and therefore have no ends to break out of the loop and thus have no ends to shed, pill or migrate.

Texturized Yarns—What they Are

Before we embark upon any discussion of what can be done with single, two-ply or three-ply texturized yarns of Caprolan, it might be well to establish a common basis of understanding of what is meant by looped yarns, coiled yarns, crimped yarns and curled yarns.

The bulking of yarns by looping is a technique that has a wide application in the textile industry today. In Figure 1 we have taken a skein of Caprolan heavy yarn, 2100 denier, 112 filaments. This was passed across convergent streams of compressed air, causing loops to appear in a random fashion in each of the 112 filaments. By adding twist to the yarn these loops were locked in place resulting in a yarn which looks very much like spun yarn. The big difference is that this yarn won't shed, pill nor fuzz.

Finer denier yarns which have been bulked by the stuffing box method are well-known. To show how a heavy yarn reacts to this technique, in Figure 2 we've used a skein of our 2100 denier, 112 filament Caprolan—identical with the skein used in Figure 1. In Figure 2 the filaments have been given an even, saw-tooth type of crimp. Other stuffing box methods provide additional variety by producing an uneven saw-tooth crimp.

A more recent development in texturization processes is curling. Until now it has been used in hosiery and sweaters. The technique used is not too different from what many of us will be doing next month when we are wrapping up our Christmas presents. Paper gift wrap tie can be made to curl up merely by drawing it over a knife edge. When yarns are bulked by the curl method they are passed through a heating zone and then drawn over a blade. This serves to flatten one side of the round filaments causing them to curl after immersion in water. In Figure 3 we have taken the same skein of Caprolan as be-

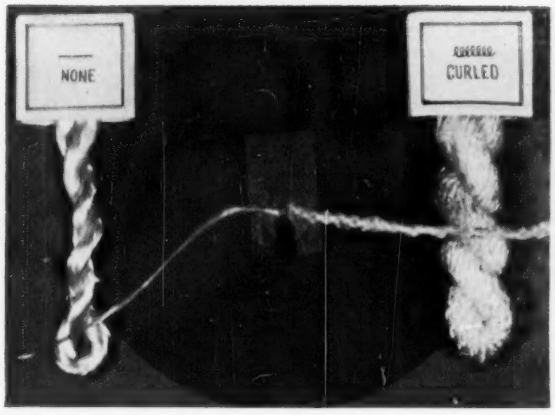


Fig. 3

Fig. 4

fore. After curling a result was obtained as shown in Figure 3.

Figure 4 represents a variety of crimping techniques which produce yarns with a more-or-less similar effect. The yarns may be subjected to heat and deformed by passing them through gears or fluted rolls; or the yarns may be knitted, heated and ravelled out and then wound onto cones. In each instance the yarns take on a more-or-less symmetrical appearance—like a chain of reversant esses. These yarns may obtain their final character after immersion in water. In Figure 4, we again have our skein of 2100 denier, 112 filament Caprolan heavy yarn. It was permanently crimped and Figure 4 shows the final result.

Coil Yarns Promising

There is one more major area of texturization just arriving at the point at which its benefits may soon be embraced by this type of application. These are coil yarns, or twist and untwist yarns. In this case texturization is achieved by putting a high amount of twist in the yarn. This twist is then heat-set and backed out and the resultant effect is quite similar to a helical spring. Until recently, coil yarns acted very much like a spring. Now, however, there are new techniques by which the yarns retain their coil-like appearance, but have practically no stretch. No unit is yet large enough to handle Caprolan heavy yarns by this method.

In Figure 5, we have a direct comparison which shows a given yardage of Caprolan heavy yarn without the benefit of texturization; the same weight of yarn which has been bulked by looping; and the same weight of yarn which has been given loft by the curling method; the same weight of yarn which may have been crimped by passage through gears, fluted rolls or perhaps subjected to knitting and ravelling; and, finally, the same weight of yarn which has been crimped by a stuffing box technique. If each of the skeins is observed carefully it will be noted that each method imparts its own distinct characteristics to the yarn. The bloom and extra cover which may be obtained from these yarns is evident, and one can see that, by using these yarns alone or in combination with each other, the possibilities are great, indeed. .

By defining these texturization processes as I have done, I hope that the reader has firmly in mind that there are at least four general categories of texturization and that within several of these categories variations in technique can produce yarns with somewhat different characteristics. Not only have each of these yarns their own individual characteristics, but there are exciting possibilities in using them in combination with each other. Let us consider next some practical applications of these yarns.

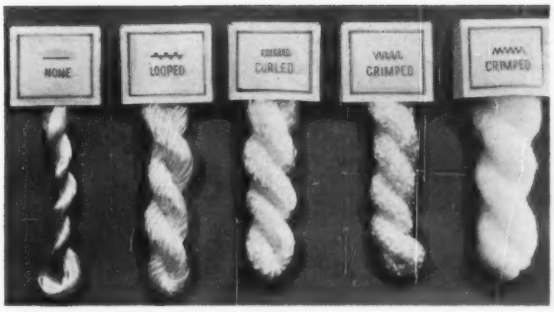


Fig. 5

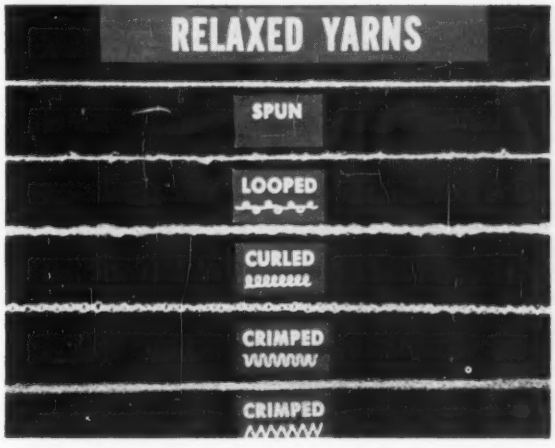


Fig. 6

In Figure 6 we are able to take a closer look at the relaxed texturized yarns shown in the skeins in Figure 5. At the top we have a yarn spun of 15 denier, three inch Caprolan staple. (Remember that 2100 denier, 112 filament Caprolan is the basis for all the texturized yarns shown in Figure 6.)

In the second yarn from the top in Figure 6, we have a loop-textured yarn, the product of the Leferon

process of Leon-Ferenbach, Inc., New York. Third from the top is the curled version produced by the Agilon process of Deering Milliken Research Corp., Pendleton, S.C. Fourth from the top is a crimped variation as developed by the Mylast process of Clarence L. Meyers Co., Philadelphia. On the bottom we have a second crimped version which results from the Spunized process of Hartford Spinning Co., Unionville, Conn. All the textured yarns in Figure 6 are in their fully relaxed state. It is clear that each of these yarns is distinctively different from the others.

Before analyzing the information provided in Figure 7 I would like to point out that each of the yarns under discussion is well able to stand on its own as an ingredient for new fabrics. The amount of bulk achieved in one yarn as against another is not the story here. The real story lies in the effects that can be achieved through the use of these yarns alone or in combination with each other and in the

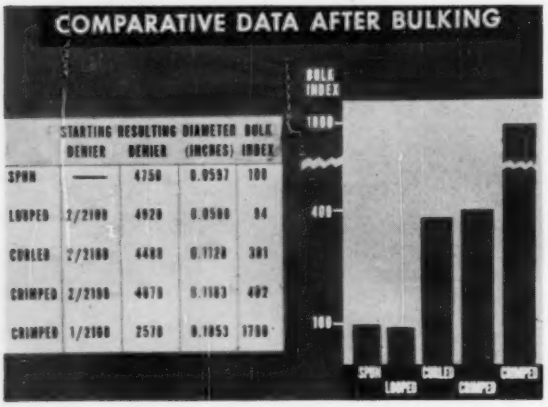


Fig. 7

economies that can be obtained through the use of these yarns when they are given an opportunity to bloom. To make sure that the reader understands we are giving this story two ways.

The extreme left hand bar of Figure 7 shows that by spinning our 15 denier, 3-inch staple into a typical carpet yarn we obtain a denier of 4750 with a diameter of .0597″. Let us establish this as our benchmark and assign to it a bulk index number of 100.

The second bar from the left shows that our yarn which was looped by the Leferon process is 2-ply, 2100 with a resultant denier of 4920 and a diameter of .0588″ and its bulk index is 94, which shows us that we have a reasonable approximation of our spun yarn in filament form.

In the third bar from the left we see that our yarn, curled by the Agilon process at a starting denier of 2-ply, 2100, has a resultant denier of 4480. This time our diameter is 0.1128″ and we have a bulk index of 381.

In the fourth bar from the left we have our yarn which was crimped by the Mylast process with a starting denier of 2-ply, 2100 and a resultant denier of 4670. Our diameter is 0.1183″ and we have a bulk index of 402.

In the bar on the extreme right we have our yarn which was crimped by the Spunized process. Here we have a starting denier of single 2100 and a resultant denier of 2570. Our diameter is 0.1853″ and our bulk index is now 1790.

As shown by this bar chart, texturized yarns of filament Caprolan run the gamut of coverage from a close approximation of spun yarns through this middle range to a yarn many times the covering power of the spun.

What happens when we use these yarns? In Figure 8 are four variations in a single carpet construction. All of these samples have a ⅜-inch loop pile, tufted with eight stitches per inch on a 3/16-inch gauge machine. Once again we've taken our 2-ply, 2100 denier Caprolan heavy yarn. At the upper left, we've used the yarn in its natural state without any texturization whatsoever, and we have obtained relatively poor cover in spite of using almost 25 ounces of pile yarn per square yard. At the upper right, we have used our 2-ply, 2100 denier Caprolan yarn crimped by the Mylast process and the reader can see a much denser construction with an interesting pebbled surface effect; yet, our yarn consumption was less than 22 ounces per square yard.

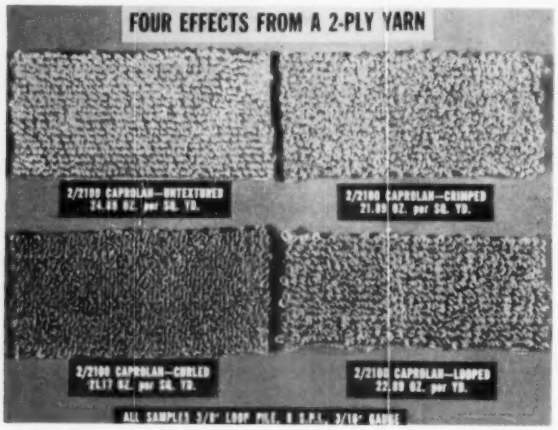


Fig. 8

At the lower left, we have our yarn, curled by the Agilon process. It shows a new and different effect, although the construction is the same as in the other samples. This time our yarn consumption was only 21 ounces per square yard. And, at the lower right, we have our same basic yarn, but this time it was looped by the Leferon process and we have obtained still another effect with a relatively low pile yarn consumption, about 23 ounces per square yard. Thus by hardly making any effort at all, we already have obtained a variety of surface effects and some interesting economies as well.

It is possible to experiment further and combine some of the texturized yarns already described. For example, it is possible to combine an end of untexturized Caprolan, an end of Ferenbach looped yarn, and an end of Deering Milliken curled yarn. By using this combined yarn in a style similar to that shown in Figure 8 we can achieve a new and different surface effect.

Carrying our experiment still further, it is possible to take an end of looped, an end of crimped yarn and an end of curled yarn. When they are twisted together and used in the same construction once more, we obtain the effect shown in Figure 8-A. Had we changed the construction to allow the texturized yarns to bloom, we would have had the combined advantages of extra cover and a more exciting effect.

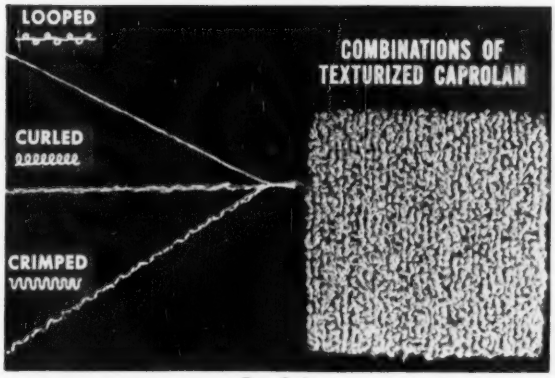


Fig. 8-A

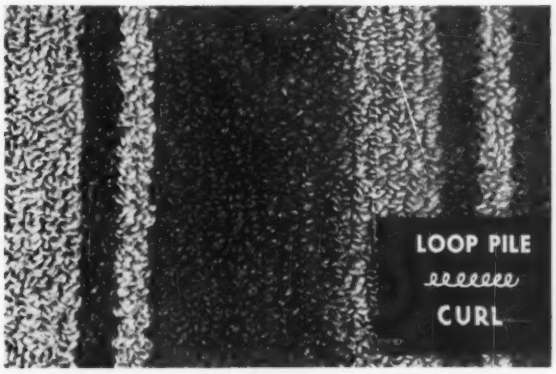


Fig. 9

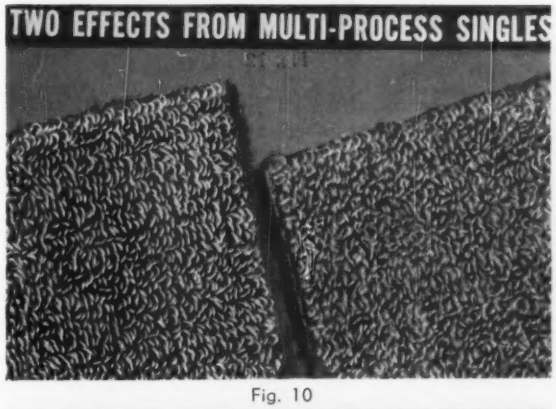


Fig. 10

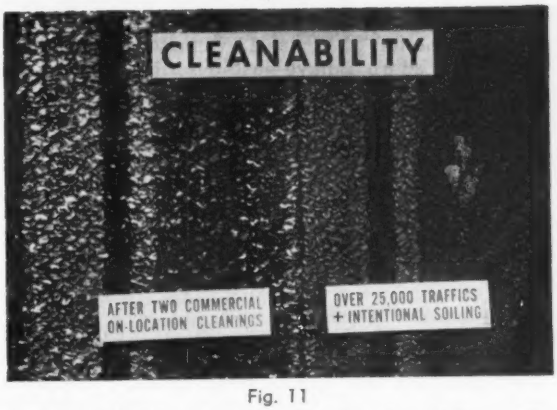


Fig. 11

Figure 9 shows a piece of carpet produced by Karastan for Deering Milliken Research Corp. for use and exhibition in the lobby of the Hotel Statler in New York City last summer. To make this carpet, filament yarns of Caprolan and nylon 6,6 were curled by the Agilon process, twisted and dyed. By doing this, the weaver was able to obtain sharply contrasting tone-on-tone effects in the yarn due to the ready dyeability of the Caprolan. The sample shown in Figure 9 demonstrates the original appearance of the carpet before being subject to traffic.

Earlier in this report, I referred to the possibility of obtaining some 45,759 new and untried yarns through texturization. I also said that if we were to combine Caprolan with nylon 6,6, we would then have over 120,000 such yarns. Now we ask ourselves this question: what would happen if we could subject a filament yarn to two or more types of texturization, plying it with one or more types of yarn which in themselves have been subjected to two kinds of texturization? And suppose some of these ends were Caprolan and some were nylon 6,6 or some other thermoplastic fiber?

In Figure 10 we see an experimental fabric produced by Ferenbach which shows two effects from multi-process singles. So that there is no misunderstanding, let me explain what I mean by a multi-process single. In the examples shown in Figure 10 it means that a strand of Caprolan was subjected first to one kind of texturization and then was subjected to a second kind of texturization. One type of multi-process yarn was used in the left-hand carpet and another type of multi-process yarn was used in the right-hand carpet. The construction is the same but the yarns are different.

So far in this report, we have discussed how texturized filament yarns can be used to achieve new fabric effects. However, new raw materials, new techniques and new ideas do not mean much unless they perform as well, if not better, than the things we already have.

Figure 9 shows a piece of multi-colored carpet that was used as a runner between the main entrance of the Cafe Rouge and an automobile exhibit in the main lobby of the Statler. Almost 20,000 traffics were counted entering and leaving the Cafe Rouge alone during the time the carpet was on the floor. The Statler lobby is undoubtedly one of the busiest in the city and while we have no way at all of counting the transient traffic that passed over the carpet, we arbitrarily selected the figure 6000 which we consider to be a conservative estimate of the additional traffic that passed over it.

After the carpet was taken up, we took a sample of it to the laboratory to test for cleanability. We asked the laboratory to really dirty it up and they did. The right side of Figure 11 shows the condition the sample was in before the cleaning trials were attempted. We were especially interested to see what effect the commercial cleaning process would have on our filament yarns. Therefore, we made two types of on-location cleaning tests. First a trial was made according to the procedures used by a commercial carpet cleaning service. In the second test we used one of the new do-it-yourself carpet cleaners now available in any supermarket. On the left side of Figure 11 is shown what happened. There is no disarrangement of the pattern, and, of course, there is no sign of bearding or pilling whatsoever.

To round out the information in this report, we felt that it would be necessary to present some data about the pilling problem and how texturized yarns actually perform in this respect. To begin with there

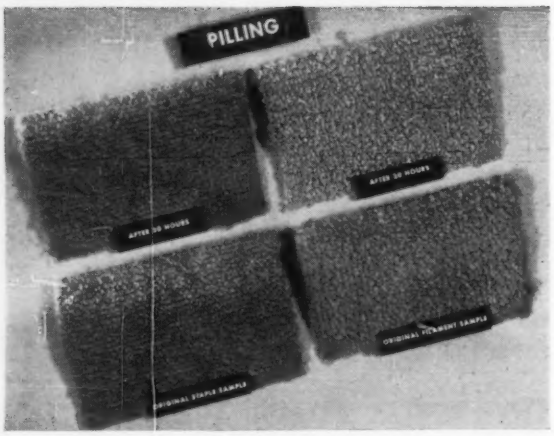


Fig. 12

is no true accelerated test for pilling. If there is, we are very anxious to know about it.

However, a lot of consideration has been given in recent months to a torture test that is supposed to give the clearest indication of whether or not carpeting will pill in service. This involves placing several carpet samples in a tumble dryer into which is also put a variety of items including things like cotton balls and pieces of two different kinds of rubber. The machine is run for ten hours after which the samples are removed for examination.

On the left side of Figure 12 is shown two samples of a spun nylon carpet, and on the right side two samples of tufted carpet of crimped Caprolan. The two pieces at the bottom are the controls and the two pieces at the top of Figure 12 were tested according to the procedure I have just described. After ten hours of testing, we found that the staple carpet had developed a considerable amount of bearding while the filament carpet did not. However, since we could find no pills on either piece, we did not really feel that we had completed a pilling test.

In the interest of trying to develop a few pills on either piece we put the samples back into the machine again and ran them for another ten hours. While both pieces appeared to be soiled as a result of the test there were no pills on either sample. However, the bearding on the staple piece is quite evident and probably would result in pilling after sweeping, vacuuming or on-location cleaning. The filament carpet speaks for itself. While the samples became soiled during the test, no bearding or fiber migration of any consequence has developed despite the loose aggregation of the fibers in the loops. Without any bearding, the possibility of pilling is remote indeed.

It has been the purpose of this report to show that texturization in heavy yarns has come a long way during the past 18 months. Many of the things reported here were developed in our fiber application laboratory at Chesterfield, Va., and a good part of the work was done independently by the yarn processors already mentioned working in their own plants and in conjunction with their customers.

At present, we do not know all the answers about these yarns, nor do we pretend to. At Allied Chemical we have devoted a lot of thought, time and energy to the development of texturized filament yarns of Caprolan and their applications in various areas of the textile industry. As explained in the beginning of this report, I have tried to tell the story of texturization in terms of a single end use—carpeting. But every idea that I have demonstrated here is valid for consideration in every end use where the qualities of texturized Caprolan yarns show either engineering or economical promise. Among these end uses are upholstery, women's outerwear, bathing suits, shower curtains. On the industrial side, there are fish nets, spinning tapes, paint roller fabrics and others.

Mill Tests (Continued from Page 42)

clearly abnormal results, due to undue pressure, shear, or slippage.

3. Average the results of five proper breaks.

Evaluation

Off-standard test results require first a complete re-test and, if still off-standard, investigation of weaving or prior processing which may be responsible for the lowered quality.

CLOTH ANALYSIS

Purpose

To assure that loom settings produce the specified picks, ends and weights of the various fabric styles.

Equipment

Measuring stick; scale, capacity 2 lbs., sensitivity 0.01 oz.; pick glass. Also desirable, through-lighted ground glass viewing surface for pick count.

Sampling

For routine, use full fabric width 8 inches long. For new style checks, use 36 inch length.

Procedure

1. Determine fabric width from five measurements, accurate to ⅛ inch.
2. Using pick glass, determine ends and picks per inch. Obtain average of 5 separate determinations. Do not come closer than 3 inches to selvage.
3. Determine cloth weight from a conditioned 6-inch length cut of full width, from:

Yards-per-Pound = 2.67/Ounce Weight of Sample.

The value 2.67 is obtained from the formula:

Yards/Lb. = 6-inches/Sample x Yards/Inch x Oz./Lb.
= 6/36 x 16/Oz. = 2.67/Oz.

4. Where preferred, determine Ounces-per-Square-Yard, Oz./Sq. Yd. from:
Oz./ Sq. Yd. = 216 x Ounce Weight of Sample/ Inch width of Sample,
where 216 is obtained by multiplying the inch length of the sample, 6, by the inches per yard, 36, yielding 6 x 36 or 216.

Evaluation

Recheck any settings which do not produce the required picks, ends and weights within the established specification limits.

LOOM SETTINGS CHECK

Purpose

To assure that looms are maintained at optimum settings for low rate of stops and high cloth quality.

Sampling

This test is best performed after the regular loom stop test, normally done by the Standards Depart-

ment for incentive pay purposes. Accordingly, it is desirable to design the loom stop test form in such manner as to permit recording of stops by causes (as illustrated in Figure 31).

Procedure

1. Make a quick survey of the looms, denoting any off-standard conditions of a general nature. (Use form, such as in Figure 29).
2. Where off-standard conditions are noted from (1), or where the prior loom stop test has shown excessive breaks, perform a detailed check of settings (such as listed in the form in Figure 30).

Evaluation

Where off-standard settings are found, corrective action should be taken on the loom or looms responsible. Where a high rate of breaks occurs without off-standard settings, the prior spinning or yarn preparation processes may be presumed responsible.

For the purposes of good control, it is desirable that the standards for all settings have been carefully established, so as to keep variations in yarn tensions at a minimum. By minimizing strains and stresses in this manner, the yarns are less likely to break during weaving. Minimum tensions can be established with modern electronic instruments, such as the Brush Tension Analyzer, which provides an automatic graphic record of tension and tension variations as checked under various settings of the loom.

Once the optimum tension settings have been established, the periodic loom settings check serves to maintain actual loom conditions at these standards.

YARDAGE CLOCKS CHECK

Purpose

To check the calibration of yardage clocks used to measure cloth length. This is important for maintenance of proper piece rates under incentive pay plans. Also, since cloth weight is usually expressed in terms of yards-per-pound, the correct determination of actual weights depends upon properly calibrated yardage clocks. Where yardage is invoiced, these checks avoid losses due to overages, or customer complaints due to shortages in the true yardage.

Equipment

Steel tape or standard cut of cloth 50 yards long.

Procedure

Alternative 1: Obtain a regular piece of cloth which has been carefully checked on the yardage clock. Straighten the piece on a smooth table, removing wrinkles but avoiding undue tension or stretch. Then measure the length with a steel tape.

Alternative 2: Run the standard cloth of 50 yards through the machine, noting any difference in the yardage shown by the clock.

Evaluation

For a piece approximately 50 yards in length, the discrepancy between steel tape yardage and clock yardage should not exceed one-half inch.

A discrepancy of one-half inch per fifty yards is equivalent to approximately 0.3 pct. This must be considered the maximum allowable because of the considerable yardages processed on each machine.

FOLDING MACHINE LENGTH OF FOLD

Purpose

On a folder, the length of a piece is usually determined by counting the number of folds. Therefore, a small error in setting will rapidly multiply into several feet after a few hundred foldings.

Equipment

Special yardstick, 40 inches long, graduated in 1/8 inch increments between the 35 and 37 inch marks. The stick should be T-shaped and taper to a thickness of not more than 1/8 inch at the broad end.

Procedure

1. Insert yardstick into a layer of folded cloth not less than two inches from top of bundle. Hold firmly, with broad end parallel to folding edge, but avoiding any pressure that might distort the cloth. Read length to 1/16 inch.
2. Repeat step 1 on alternate sides of the bundle, until four readings have been taken. Average the readings and compare with the standard.

Evaluation

The standard is usually between 35¾ and 35⅞ inch, or a little below one full yard. This allows for

(Cont. on Page 83)

LOOM STOP REPORT

												TOTAL	Total %	Unit %
	LOOM No.													
	STYLE													
WARP BREAKS	Break in Dropwires													
	Break in Heddles													
	Break in Knot													
	Break in Reed													
	Break in Selv													
	Break in Warp													
	Crossed Ends													
	Cut by Shuttle													
	Loose Ends													
	Lint on Yarn													
	Strip backs													
	Unknown													
	TOTAL													
FILLING BREAKS	Bad Quill/Bobbin													
	Break at Bunch													
	Break in Shuttle													
	Break in Shuttle Box													
	Cut Filling													
	Cut by Feeler													
	Knots in Quill													
	No Bunch													
	Strip Backs													
	Sloughed off													
	Unknown													
	TOTAL													
MECHANICAL	Bang off													
	Break on 2nd Pick													
	Filling Run Out													
	Loom Repairs													
	Mis-indication													
	Mis-pick													
	Stop Off													
	Stop Transfer													
	TOTAL													
	GRAND TOTAL													
SUMMARY												Total Stops set / Hour	Total Stops Loom/Hour	
	Warp Stops/Hour													
	Filling Stops/Hour													
	Mech. Stops/Hour													
	Total Stops/Hour													

Fig. 31

FREQUENCY TALLY

Mill: Specimen — Date: 1/5 195_

Item: Lug Strap Height, In. — by: C. J.

Value	Tally of Actual Frequencies
6	
6 1/2	I
7	III
7 1/2	𝍸 IIII
8	𝍸 𝍸 𝍸 𝍸 III
8 1/2	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸
9	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸
9 1/2	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸
10	𝍸 𝍸 𝍸 𝍸
10 1/2	𝍸 𝍸
11	II
11 1/2	II
12	

Fig. 32

For the DYER and FINISHER

Textile Printing Dyes

Arnold, Hoffman & Co. has summarized its current views on vat dyestuffs for textile printing in a technical circular. Among the points made in the circular is that a vat dyestuff may be required in a variety of different standardizations. The company also announced a new non-substantive softener, Synthravon P, which is designed for incorporation into thermosetting resin finishing baths.

The new softener gives to cottons and synthetics high tear strengths, good resistance to washing and dry cleaning, and excellent resistance to scorching and yellowing. *For copies of the new circular and for further information about the new softener, write the editors.*

Dylan Replaces Sanforlan

Wool fabrics and garments treated to control shrinkage that used to carry the Cluett, Peabody trademark "Sanforlan" soon will be carrying the "Dylan" label. Stevenson (U.S.A.) Ltd. has been incorporated as an affiliate of Stevenson (Dyers) Ltd. of Ambergate, England, to assume direct licensing of the Stevenson methods of stabilizing wool for washability, matting and shrinkage under the Dylan tag.

The Dylan mark is being introduced all over the world. The process had been sublicensed in this country by Cluett, Peabody until that firm decided to discontinue it and withdraw the Sanforlan mark earlier this year. Dylan specifications are generally similar to those which prevailed on Sanforlan. Permission to use the Dylan mark is given by license and by an agreement for quality control. *For further information write the editors.*

New Antifoam

A new antifoam and leveling agent for coatings and adhesives has been developed by the Hodag Chemical Corp., Chicago, Ill. Called Hodag Antifoam TBX, this liquid is said to be widely effective for systems based on starches and dextrines; natural proteins such as casein, glue, soya; and synthetics—latexes, methyl cellulose, polyvinyl alcohol, and carboxymethylcellulose. *For further information write the editors.*

Orlon Bleaching Method

A new bleaching method for the recently developed whiter Orlon acrylic fiber has been announced by Du Pont's Textile Fibers Department. The new process, described in the company's Technical Bulletin No. OR-83, is said to eliminate the need for fuming or corrosive chemicals and permits scouring and bleaching of most materials in one bath. *For copies of the bulletin write the editors.*

Morningstar Expands

Morningstar, Nicol, Inc., has merged with Federal Adhesives Corp. and its affiliates. Federal and one of its affiliates, Adex Manufacturing Co., produce industrial and packaging adhesives, polyvinyl acetate resin emulsions and other chemical specialties, similarly manufactured by a Morningstar subsidiary, Paisley Products, Inc.

Federal's other affiliates are Federal Latex Corp. which makes rubber latex compounds, and Federal Chemicals Corp., manufacturer of industrial chemicals and vinyl plastisols.

New Dyeing Process

"Chem-acril," a new process for dyeing Acrilan acrylic fiber and wool blends within dyeing times commercially acceptable for wool, has been announced by Chemstrand Corp. The method involves addition of cationic and non-ionic materials to the dyebath without pretreatment. Last year Chemstrand introduced the Chem-nyle process for dyeing filament nylon. *For further information write the editors.*

New Dacron Warp Sizing

Rohm & Haas Co. reports that its new warp sizing agent, Acrysol P-6, is finding a good acceptance among mills weaving filament fabrics of Du Pont's Dacron polyester yarn. The product recently became available in commercial quantities. Acrysol P-6 has been found by users to provide a high degree of loom efficiency, according to R. G. Thomas of Rohm & Haas's textile chemicals department. *For further information about this product, write the editors.*

Better Sunlight Test Results

A new technique which will give textile manufacturers better correlation between sunlight test results and fabric performance in actual industrial and consumer use has been announced by Joseph E. Norton, chairman of the American Association of Textile Chemists and Colorists' committee on lightfastness. The new method of more accurate control of testing is based on the use of "langley units," which measure total sun radiation instead of the usual "sun hours" process for recording exposure to daylight. *For further information write the editors.*

Textile News Briefs

Fiber Prices Increased

Three yarn producers announced price increases last month. American Viscose Corp. raised its 8.0 and 15.0 denier white crimped rayon carpet staple from 33 to 34 cents a pound. Hartford Rayon Corp. also raised its crimped white 8 and 15 denier staple from 33 to 34 cents. Eastman Chemical Products, Inc. raised by five cents prices of 2200, 2700 and 5300 denier lofted filament natural and solution-dyed yarns.

New Celanese Program

Celanese Corp. of America has embarked on a second design program hard on the heels of its current "World of Ideas" decorative fabrics promotion. John and Earline Brice, home furnishings' consultants to Celanese, will bring back from a tour of South America design inspirations for the new program. From objects they bring back, converters' own design staffs will be invited to create new decorative fabrics woven of the Celanese yarns—acetate, solution-dyed acetate, Fortisan, rayon, and Arnel triacetate.

Continental Now Sniafibres

Continental Synthetic Textiles, Inc., wholly-owned subsidiary of Snia Viscosa of Milan, Italy, manufacturers of synthetic yarns and fibers, recently announced a change in name to Sniafibres Corp. J. John Lawler, president of Sniafibres said officers, directors and personnel will remain as heretofore, as will the offices at 350 Fifth Ave., New York City.

Want to Rent Carpet?

Renting or leasing, instead of purchasing, is being introduced to the floor covering industry by the Wunda Weve Carpet Co. Business firms can now lease new carpeting from Wunda on a three-year basis with terms including 36 monthly payments for the rental. A feature of the plan includes an option whereby the carpet can be purchased by the lessee for a total cost of one dollar at the end of the lease. Should new carpeting be desired, a trade-in allowance will be made.

Nylon Tires Preferred Here

Consumers Cooperative Association, which operates a chain of 1,150 tire outlet stores in a nine-state Midwest area, has switched 100% to nylon cord for its first-line Co-Op brand passenger tires. In the 1957 second quarter, nylon

U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarns, staple and tow as reported by the producers in November 1957. All prices are given as subject to change without notice.

RAYON FILAMENT YARN

American Bemberg

Current Prices

Regular Production Reel Spun Yarn

Den/Fil	No Turn Skeins	Turned* Skeins & Cones	8½ Turns	High Turn Skeins & Cones 12 Turns	15 Turns	18 Turns
40/30	$1.49	$1.95	....	....	....	$2.08
50/36	1.24	1.50	....	....	....	1.80
65/45	1.14	1.30	....	$1.53	....	1.58
75/60**	1.04	1.18	....	1.41	$1.46	1.49
100/74**	.95	1.08	....	1.33	1.38	1.44
125/60	.94	1.05	$1.09	1.30	....	....
150/120	.93	1.02	1.12	1.27	....	....
300/225	....	.95	....	....	1.08	....

* Turn includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.
** Spun Dyed Cupracolor Black 15¢ per lb. extra.

"44" HH Spool Spun Yarn

Den/Fil	No Turn Tubes	No Turn Beams	5 Turn Beams	5 Turn Cones	12 Turn Beams	12 Turn Cones	15 Turn Cones
40/30	$1.35	$1.35	....	....	....	....	....
50/36	1.00	1.00	....	....	....	....	....
65/45	1.05	....	....	....	....	$1.42	....
75/45*	.97	....	$1.08	$1.08	$1.31	1.31	$1.39
100/60*	.89	....	1.03	1.03	1.23	1.23	1.31
125/60	.84	....	.99	.99	....	....	....
150/90*	.77	....	.81	.81	1.15	1.15	1.24
150/120	.81	....	....	.93	....	....	....

* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

Nub-Lite (Short Nubbi)

Code	Den/Fil	2½ Turn Natural Cones	2½ Turn Cones*	5 Turn Natural Cones	5 Turn Cones*
1515	160/90	....	....	$1.45	$1.35
1519**	155/90	....	....	1.45	1.35
2008	200/120	....	....	1.06	.96
2027***	210/120	....	....	1.06	.96
3002	315/180	$1.10	$1.00	....	....
4011	410/224	1.10	1.00	....	....
6001	600/360	1.08	.98	....	....
8001	860/450	1.08	.98	....	....

* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn skeins same as natural cone prices.
** Code 1515 can be run in warp or filling.
*** Code 2027—Softer than 2000.

CUPIONI Type B

Code	Den/Fil	No Turn Skeins	2½ Turn Cones	5 Turn Cones
9610	50/30	$1.39	....	$2.14
9650	70/45	1.29	$1.64	....
9660	100/60	....	1.48	....
1545	150/90	....	1.25	....
9720	200/120	....	1.20	....
9730	285/135	....	1.10	....
9792	450/225	....	1.10	....
9814	600/372	....	1.07	....
9837	940/372	....	.97	....

"Spun Dyed Cupracolor is spun 150, 285, and 940 deniers at 35¢ per pound extra. Cupracolor Black comes in all deniers."

Long Type A

Code	Den/Fil	1½" Turn Cones	2½ Turn Cones	5 Turn Cones
9690	150/135	....	$1.25	$1.30
9739	290/135	....	1.05	1.10
9781	460/372	....	1.05	1.10
9816	600/372	....	1.02	1.07
9827	900/372	....	.95	1.00
9877	1180/372	$.95	....	1.00
9926	2500/744	.95	....	1.00

STRATA SLUB

Code	Den/Fil	Turned Cones	Price
9697	150/135	3½	1.30
9747	275/225	3½	1.20
9798	450/372	2½	1.10
9823	600/372	2½	1.05
9847	960/372	2½	.97
9885	1290/372	1½	.95
9934	2680/744	1½	.95
9964	4750/1488	1½	.95

"Spun Dyed Cupracolor is spun in 600 and 960 deniers at 35¢ per pound extra."

FLAIKONA

Code	Den/Fil	Turned Cones	Price
9669	159/148	2½	$1.35
9769	300/224	3½	1.40
9807	600/405	2½	1.20
9840	900/450	2½	1.10

"Spun Dyed Cupracolor Black 35¢ per pound extra."

Terms: Net 30 days, F. O. B. shipping point. Minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight allowed to Memphis, Tennessee. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F. O. B. delivery point.

American Enka Corp.

Current Prices
Effective December 4, 1956
Standard Quality Yarns

Standard Quality Rayon Yarns

A. Natural

Den./Fil.	Luster	Turns	Weaving Cones	Beams	Skeins Long	Skeins Short	Cakes	Knitting Cones
50/18	E	5 S						1.56
50/20	B	2.5 S&Z					1.45	
75/10	B	3 S&Z					1.08	
75/18	E	4 S						1.22
75/30	B	2.5,4S&Z	1.17	1.17			1.08	1.17
75/30	B	8 S	1.22			1.37		1.22
75/45	P,E	2.5, 4,5S&Z	1.17	1.17	1.23	1.37	1.08	1.17
75/60	B,P	3,4 Z	1.22				1.10	1.22
100/14	B,P	3 S&Z				1.12	.96	
100/40	B,E	12 S						1.27
100/40	B,P,E	4,5 S&Z					.96	1.04
100/40	B	6 S	1.10					
100/40,60	B,P	2.5,4S&Z	1.04	1.04	1.08	1.12	.96	1.04
100/60	E	2.5 S	1.06	1.06			.98	
125/40	E	3 Z						.96
150/40	B,P,E	2.1,3S&Z	.91	.91	.94	.99	.86	.90
150/40	B,E	5 S&Z	.91		.94	.99	.86	
150/40	B,E	8 S&Z	.97		1.00	1.05		
150/40	B,P	10 S&Z	1.03	1.03				
150/90	B,E	2.1 S&Z	.92	.92			.87	
200/40	P	3 Z						.82
200/40	B,P	8 S				.95		
250/60	P,E	2.4 Z						.75
300/50	B,E	3 S	.73	.73				
300/60,120	B,P,E	2.1 S&Z	.73	.73		.76	.71	.73
300/60	B	3.5 S	.73	.73		.76	.71	
300/60	B	4.3 S	.76	.76			.74	
300/60	B	7 S	.83					
300/40,120 H.T.	B	2.5, 3,4S	.75	.75				
450/80	B	3 S	.70	.70		.72	.68	
600/80,120	B,E	3 S	.69	.69			.67	
900/120	B	3.4 S	.68				.66	
900/120 H.T.	B	3.6 S	.70				.68	

"Jetspun" Colored Yarns

Den./Fil.	Tenacity	Turns	Weaving Cones	Beams*	Cakes	Colors
100/40	Regular	2.5S	1.39	1.39		All
150/40	Regular	2.1S	1.26	1.26		All
200/40	Regular	8.3S	1.27			All
450/80	Regular	3.0S	1.05			All
300/40	High	3.4S	1.10	1.10		All
600/80	High	3.4S	1.06			All
900/120	High	3.4S	1.05	1.05		All

Registered trade mark of American Enka solution dyed rayon yarn.
* Single color.

"Skyloft"

American Enka's Lofted Filament Rayon Yarn
Natural and Jetspun (R)
Types Available and Prices

Denier	Den/Per Filament	JETSPUN Natural	JETSPUN Black	JETSPUN Other Colors
2200	15	$.67	$.79	$.84
2700	15	.65	.75	.82
4300	8	.64	.74	.81
5300	15	.63	.73	.80

American Viscose Corp.

Effective December 14, 1956

Graded Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	All Cones Beams Tubes	Cakes
50	20	Bright & Dull	$	$1.59	$1.56	$1.45
60	10	Bright	....	....	1.41	1.30
75	10-30	Bright	1.24	1.20	1.17	1.08
75	30	Dull	....	....	1.17	1.08
100	14-40	Bright	1.12	1.07	1.04	.96
100	60	Dull	....	....	1.06	.98
150	24-40-60	Bright & Semi-Dull	.99	.94	.91	.86
150	40	Dull	....	....	.91	.86
150	90	Dull	....	....	.92	.87
200	10-44	Bright	.90	.85	.82	.78
250	60	Semi-Dull & Dull	.82	.78	.75	.73
300	44	Bright & Dull	.79	.76	.73	.71
300	234	Dull	....	....	.75	.73
300	120	Rayflex 6-Turns	....	....	.85	.83
450	100	Bright	....	.72	.70	.68
600	100	Bright	....	.71	.69	.67
900	60-100-150	Bright	....	.70	.68	.66
1200	75	Bright	....	.67	.65	....
2700	150	Bright	....	.70	.68	....

Extra Turns Per Inch

75	30	Bright 6-Turns	$1.36	$1.32	$1.29	$ ....
100	40	Bright 6-Turns	1.24	1.19	1.16	1.08
150	40	Bright 6-Turns	1.09	1.04	1.01	.96
200	44	Bright 6-Turns	....	.95	.92	....
300	15	Bright 5-Turns	....	....	.78	....
300	44	Bright 6-Turns	....	.86	.83	.81
600	30	Bright 5-Turns	....	.76	.74	.72

cord tire sales accounted for 33% of the total passenger tire sales volume at a time when the company's first-line conventional cord tire inventory was being liquidated.

Sargent Gets More Space

C. G. Sargent's Sons Corp., Graniteville, Mass., has announced purchase of the property formerly known as the Abbot Worsted Mills in Graniteville, for expansion of their textile machinery fabrication department. The purchase included the mill of 56,000 square feet. Sargent plans to occupy a substantial part of the space immediately.

Personnel Changes

C. Richard Mann has joined Chemstrand Corp. as a technical personnel representative, **Loyd M. O'Guin, Jr.** and **James M. Faria,** as senior representatives in the Technical Sales Service Department. Three more technical sales service representatives recently appointed include **Robert E. Freeman, E. Ken McIntosh,** and **Hugh L. Middleton.**

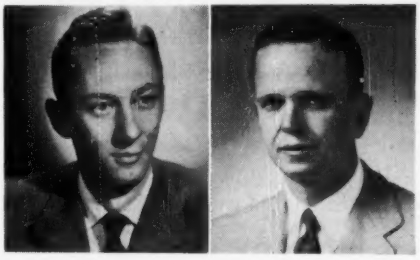
Paul Luck has joined Ciba Co., Inc. as special assistant to the general sales manager.

Robert W. Bond has been named manager of the Sales Service Department of Corn Products Sales Co.

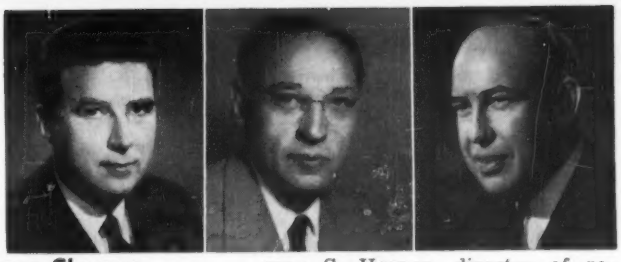
David R. Eagleson has been promoted to assistant sales manager of the Fatty Acid Sales Department of Emery Industries, Inc. **Paul N. Leech** has succeeded Mr. Eagleson as sales representative for Emery in the Chicago area.

Walter J. Newcomb has been appointed sales engineer to head the cloth dyeing machinery division of Gaston County Dyeing Machine Co. and **Albert P. March,** sales engineer for the Northeastern section of the country.

Louis F. Laun has been named general merchandising manager of the Textile Division of Celanese Corp. of America, succeeding **Paul D. White. Dr. William J. Roberts** has been appointed director of research of the company's Summit, N. J. research laboratories.



Dr. W. J. Roberts L. F. Laun



Left to right:
F. L. Bissinger
M. P. Epstein
Dr. G. S. Hooper

Industrial Rayon Changes

Changes in executive personnel of Industrial Rayon Corp. have been announced by Hayden B. Kline, president. Frederick L. Bissinger has been elected to the newly-created position of group vice president, marketing and research; Moses P. Epstein, vice president in charge of marketing, and Dr. Gilman S. Hooper, director of research.

Mr. Bissinger will make his headquarters in the firm's general offices in Cleveland, and Mr. Epstein will be located in the New York sales offices. Dr. Hooper will be in charge of research in both high polymer and viscose rayon divisions.

Rayflex Yarns

75	30	Rayflex	$	$	$1.20	$1.11
100	40	Rayflex	....	....	1.07	.99
150	60	Rayflex	....	....	.94	.89
200	75	Rayflex	....	....	.85	.81
300	120	Rayflex	....	....	.75	.73
300	120	Rayflex 6-Turns	....	....	.85	.83
450	120	Rayflex	....	....	.72	.70
600	234	Rayflex	....	....	.71	.69
900	350	Rayflex	....	.72	.70	.68

Super Rayflex Yarns

600	490	Super Rayflex	$	$	$ .78	$ ....
900	720	Super Rayflex	....	....	.77	....

Thick and Thin Yarns

150	40-90	Bright & Dull	$	$	$1.15	$ ....
200	75	Bright & Dull	....	....	1.05	....
300	120	Bright & Dull	....	....	.95	....
450	100	Bright & Dull	....	....	.92	....
490	120	Bright & Dull	....	....	.95	....
900	350	Dull	....	....	1.00	....
920	120	Bright & Dull	....	....	1.00	....

Colorspun Yarns

Currently producing regular and high tenacity at premiums at $.35 per pound.

Viscose Filament Yarns

The following material deposit charges are required:

Metal Section Beams	$170.00 each
Wooden Section Beams	55.00 each
Wooden Section Beam Crates	30.00 each
Metal Section Beam Racks	75.00 each
Metal Tricot Spools—14" flange	30.00 each
21" flange	60.00 each
32" flange	150.00 each
Metal Tricot Spool Racks—14" flange	135.00 each
21" flange	100.00 each
32" flange	75.00 each
Wooden Tricot Spool Crates	20.00 each
Cloth Cake Covers	.05 each

Same to be credited upon return in good condition—freight collect.
Terms: Net 30 days.

Celanese Corp. of America

Current Prices
Effective December 14, 1956

Den.	Fil.	Twist		Beams	Cones	Cakes	Non Shrunk Tubes
#49 and #14 Production							
75/30/3	Bright			....	$1.11	$1.03	....
100/40/2Z	"			$.96	....	....	....
100/40/3	"			.98	.96	.91	....
100/40/5	"			....	1.02	.97	....
100/60/3	"			....	.97	.92	....
125/40/2Z	"			.94	.92	....	....
150/40/3	"			.89	.85	.80	....
150/40/2Z	"			.87	....	....	....
150/40/5	"			....	.91	.86	....
150/40/8	"			....	.97	.92	....
150/40/0	"	NS		....	.71	....	....
300/50/3	"			.72	.71	.69	....
300/50/0	"	NS		....	.63	....	....
#20 Production							
150/40/3	Bright			.87	.83	.78	....
150/40/0	"	NS		....	.71	....	....
150/40/2Z	"			.87	....	....	....
300/50/3	"			.72	.71	.69	....
300/50/0	"	NS		....	.63	....	....
#20 Production							
100/40/3	Dull			....	.96	.91	....
100/60/2Z	"			1.00	....	....	....
100/60/0	"			....	.93	....	....
100/60/5	"			1.04	1.02	.97	....
150/40/3	"			.87	.83	.78	$.77
150/40/0	"	NS		....	.71	....	....
150/90/3	"			....	.90	.85	....
250/60/0	"	NS		....	.67	....	....
250/60/3	"			....	.75	....	.70
#52 Thick & Thin Rayon							
150/60/3	Bright			....	1.15	....	....
450/120/3	"			....	.89	....	....

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.
Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices
Effective with orders December 7, 1956

Bright and Dull

Den.	Fil.	Turns/ Inch Up to		(A) Cones, Beams, Tubes	Skeins	Cakes
40	20	3	Textile "Cordura"*	$1.90	$1.90	$1.85
50	20	3		1.63	1.63	
50	20	3	Textile "Cordura"	1.65	1.65	1.60
50	35	3	Textile "Cordura"	1.70	1.70	1.65
75	10	3		1.17	1.20	1.08
75	15	3		1.17	1.20	1.08
75	30	3		1.17	1.20	1.08
100	15	3		1.04	1.07	.96
100	40	3		1.04	1.07	.96
100	60	3	Bright	1.04	1.07	.96
100	60	3	Dull	1.06	1.09	.98
125	50	3		.96	.98	.90
150	40	3		.91	.92	.86
150	60	3		.91		
150	60	3	Textile "Cordura"	.92	.93	.87
150	90	3	Dull	.92	.93	.87
150	100	3	Dull	.92	.93	.87
200	35	3		.82	.84	.78
200	20	3		.82		
300	50	3.5		.73	.76	.71
300	120	3	Textile "Cordura"	.74	.77	.72
450	72	3		.70	.72	.68
600	96	3		.69	.71	.67
600	240	3	Textile "Cordura"	.70	.72	.68
900	50	3		.68	.70	.66
900	144	3		.68	.70	.66
1165	480	3	Textile "Cordura"	.68	.68	.85
1800	100	3		.68		
2700	150	3		.68	.70	
5400	300	3		.75		

Thick and Thin

100	40	3	#7	1.38		1.38
150	90	3	#7	1.15	1.16	1.15
200	80	3	#7	1.05	1.06	1.05
450	100	3	#7	.89	.90	.89
1100	240	3	#60	1.00		1.00
2200	480	3	#60	.95		.95

(A) 2¢/lb. additional for cones less than 3# and tubes less than 2#.
Terms: Net 30 days.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.
• "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective December 21, 1956

Denier	Filament	Turns per In.	Type	2.8 Lb Cones	4.4 Lb Cones	Beams	2.2 Lb Tubes	4.4 Lb Tubes
100	40	2.5 "S"	Bright	1.04		1.04		
150	40	2.5 "S"	Bright	.91		.91		
150	40	2.5 "S"	Luster #4	.91		.91		
150	40	2.5 "S"	Bright intermediate strength	.92				
200	20	2.5 "S"	Bright	.82				
200	40	2.5 "S"	Bright	.82				
300	44	2.5 "S"	Bright	.73		.73		
300	80	2.5 "S"	Bright	.73		.73		
300	80	2.5 "S"	Luster #4	.73		.73		
300	80	2.5 "S"	Bright extra strong	.75		.75		
450	60	2.0 "S"	Bright		.70	.70		
600	90	1.5 "S"	Bright		.69	.69	.69	.69
900	50	2.0 "S"	Bright		.68	.68	.68	.68
900	150	1.5 "S"	Bright		.68	.68	.68	.68

Luster #4 is semi-dull.
Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River. PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

North American Rayon Corp.

Current Prices

First Quality Yarns	Den/Fil	Twist	Cones: Knitting* Cones	Cones: No Twist Knitting Cones	Cones: Beams, Tubes** and Weaving Cones	Uncreated Cakes
	75/30	3.5			$1.17	$1.08
	75/30	7			1.30	
	75/30	15			1.37	
Normal	75/30	20			1.40	
Strength Yarns	100/40/60 Brt.	3.5			1.04	.96
NARCO	100/40/60	12			1.22	
	125/52/60	3			.96	.90
	125/52	10			1.13	
	150/42/60/75	3	$.90		.91	.86
	150/42	0		$.71		
	300/75	3	.73		.73	
	300/75	0		.63		
	600/98	3	.69		.69	
	900/46	2.5	.68		.68	
	1800/92	2.5	.68		.68	
Semi-High Strength Yarns Hi-NARCO	300/75	3			.74	

* Oiled Cones $.01 Per Pound extra for Graded Yarns only.
** 1 lb. tubes $.02 Per Pound extra for Graded Yarns only.
Terms: Net 30 days, F.O.B. shipping point, minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight to Memphis, Tennessee allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point.
Prices subject to change without notice.

RAYON HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective June 1, 1957

Tempra (High Tenacity)

Denier	Elongation	Beams & Cones
1100/480	Low	.59
1230/480	High	.59
1650/720	Low	.55
1820/720	High	.55
2200/960	High & Low	.54

Suprenka (Extra High Tenacity)

1650/720	Low	.58
1900/720	High	.58
2200/960	Low	.57

Terms: Net 30 days, f.o.b. Enka, North Carolina, or Lowland, Tennessee; minimum freight allowed to first destination east of the Mississippi River.

Herman L. Steen has been appointed sales manager for Geigy Dyestuffs, Division of Geigy Chemical Corp.

James M. Cloney has been named sales manager for the Antara Chemicals Division of General Aniline & Film corp. and **John T. Robinson** director of sales administration of the Dyestuff & Chemical Division.

R. Bruce Kenworthy has been appointed administrative assistant for sales for Hartford Rayon Co., succeeding **Wesley L. Prince, Jr.** who has become northern district sales representative. **Harold C. Herndon** has become southern district sales representative.

A. J. Govin

Howard Names Sales Agent

Howard Bros. Mfg. Co. has appointed Alfred J. Govin as sales representative to textile mills in Canada, New England and parts of the Midwest. Govin, originator of the Govin type card clothing, also will act as consultant to woolen yarn manufacturers.

A. E. Winslow has joined the Research and Development Departments of James Hunter in an advisory capacity.

F. Russell Cashner has been appointed plant manager of Industrial Rayon Corp.'s Cleveland plant, succeeding **Dr. Galo W. Blanco** who has retired. **Kenneth Robbins** has been promoted to industrial engineering manager, succeeding Mr. Cashner.

Paul K. Minta has been appointed chief chemist of Kenyon Piece Dyeworks, Inc.

Theodore Webster has been named Eastern Seaboard sales representative for the Lumite Division of Chicopee Mills, Inc.

A. Gregg Noble has been appointed assistant to the director of operations at Allied Chemical & Dye Corp.'s Solvay Process Division and has been succeeded in his former post as manager of Solvay's Mutual Chromium Chemical plant at Baltimore by **Robert E. James. Edward J. Walsh** will assist Mr. James.

American Viscose Corp.

Effective November 1, 1956
Revised June 10, 1957

Super Rayflex

Denier	Filament	Twist	Beams	Cones
1100	490	0	$.63	$.63
1100	490	4.1Z	.63	....
1650	980	0	.58	.58
1650	980	4.1Z	.58	....
2200	980	0	.57	.57

Tire Yarn

1100	490	2.5Z	.59	
1650	980	0	.55	.55
1650	980	3.6Z-4.1Z	.55	....
2200	980	0	.54	.54

High Strength

1150	490	2.5Z	.59	.59
1230	490	3.1Z	.59	.59
1650	980	4Z	.55	.55
1875	980	4Z	.55	.55

Super Rayflex, Tire Yarn and High Strength yarns are sold "Not Guaranteed for Dyeing."

Tire Fabric

	Tire Yarn	Super Rayflex
1100/490/2	$.69	$.73
2200/980/2	.625	.655

Above prices based on 80% minimum Carcass, 15% maximum Top Ply, 5% maximum Breaker.

1650/980/2

* Production Factor				
525	Open	Carcass	$.635	$.665
300	490	Top Ply	.645	.675
115	275**	Breaker	.67	.70

* Determined by dividing total ends by picks.

** Orders limited to 5% of total 1650 Fabric booked for any given period.

The following deposit charges are made on invoices:

Beams	$55.00 each
Crates (Metal)	75.00 each
Fabric Shell Rolls	3.50 each

Same to be credited upon return in good condition—freight collect
Terms: Net 30 days.

Celanese Corporation of America

Effective December 27, 1955
Supersedes September 12, 1955

Fortisan Yarn Prices

Denier	Packages	Natural	Black
30/2.5/40	2 lb. Cones	$3.00 lb.	$3.35 lb.
60/2.5/80	4 " "	2.40 "	2.75 "
90/2.5/120	4 " "	2.25 "	2.60 "
120/2.5/160	4 " "	2.05 "	2.40 "
150/2.5/180	4 " "	1.95 "	2.30 "
270/2.5/360	4 " "	1.85 "	2.20 "
300/2.5/360	4 " "	1.85 "	2.20 "

60/2.5/80 Olive Green—Spun Dyed—OG106 4 lb. Cones 3.50 lb.

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U. S. A. east of the Mississippi River.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

Fortisan-36 Rayon Yarn
Bright

Denier and Filament	Twist	4# cones	8# cones	Tubes	Beams
270/280	0.8Z	$2.30			
300/280	0.8Z	$2.05			
300/280	3Z	$2.20			
400/400	0.8Z	$1.75			$1.70
400/400	0			$1.75	
800/800	0.8Z	$1.25	$1.25		$1.20
800/800	3Z	$1.40			
800/800	0			$1.25	
1600/1600	0.8Z	$1.15	$1.15		$1.10
1600/1600	2½Z	$1.30			
1600/1600	0			$1.15	

Terms: Net 30 days. Shipments prepaid to any destination in U. S. A. East of the Mississippi River. Shipments West of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices
Effective with shipments April 17, 1957

"Super Cordura"*

Den Fil	Turns/in	All Packages
1100-480	2	$.63
1100-720	2	.63
1200-720	2	.63
1250-480	2	.63
1530-960	2	.61
1600-960	2	.58
1650-720	2	.58
1650-1100	2	.58
1800-1100	2	.58
1900-720	2	.58
2200-960	2	.57
2200-1440	2	.57
2400-1440	2	.57
2450-960	2	.57

Terms: Net 30 days.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective November 1, 1956

Unbleached Bright High Tenacity Yarns

SINGLE END BEAMS AND CONES:

Den.	Fil.	Turns Per In.	4.4 Lb. Cones	Beams	2.2 Lb. Tubes	4.4 Lb. Tubes
1100	480	1.5 "Z"	.59	.59	.59	.59
1650	720	1.5 "Z"	.55		.55	.55
2200	1000	1.5 "Z"	.54	.54	.54	.54
3300	1440	1.5 "Z"	.54	.54	.54	.54
4400	2000	1.5 "Z"	.54	.54	.54	.54

"Above Prices apply to Type 100. Type 200 Tyron Prices are 3¢ more."

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points east of the Mississippi River.

Prices are subject to change without notice.

North American Rayon Corp.

High-Strength Yarns—SUPER-NARCO

		Twist	Cones	Beams
1650	720	3Z		$.55
1850	720	3Z	$.55	
Super High Strength Yarns—				
1650	720	1.5Z	.58	.58

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates if sold f.o.b delivery point.

ACETATE FILAMENT YARN

American Viscose Corp.

Current Prices
Effective December 21, 1956

Bright and Dull

* Intermediate Twist

Denier & Filaments	Cones & 4-6 Lb. Tubes	Twister Tubes	Warps	Spinning Cones	Twist Warps
55/14	$1.04	$1.02	$1.05	$.98	$.99
75/20	1.00	.98	1.01	.94	.95
100/28	.95	.93	.96	.89	.90
120/32	.86	.84	.87	.80	.81
150/41	.77	.76	.78	.72	.73
200/54	.73	.72	.74	.69	.70
300/80	.69	.68	.70	.65	.66

* Standard Twist 2¢ additional.
Terms: net 30 days.

Celanese Corp. of America

Current Prices
Effective December 20, 1956

Bright and Dull

Denier and Filaments	Intermediate Twist 4 & 6-Lb Cones	Beams	4 & 6-TM Tubes	4-Pound Cheeses	Spinning Twist Cones	Beams	O Twist Tubes
45/13	$1.17	$1.18	$....	$....	$....	$1.12	$....
55/15	1.04	1.05	....	....	.98	.99	.925
75/20	1.00	1.01	.98	....	.94	.95	.84
75/50	1.02	1.03	1.00	....	....	.97	.89
100/26-40	.95	.96	.93	....	.89	.90	.81
120/40	.86	.87	.85	....	.80	.81	....
150/40	.77	.78	.77	.77	.72	.73	.69
200/52	.73	.74	.73	....	.69	.70	....
300/80	.69	.70	.69	....	.65	.66	.63
450/120	.67	.68	.67	....	.63	.64	....
600/160	.65	.66	.65	....	....	....	....
900/80-240	.63	.64	.63	....	....	....	.61

150 Denier 12-TM Tubes	.76
55/0/15 Dull Tricot Beams	.985
2-Pound Cheeses	.01 Less Than 4-Pound Cheeses
2-BU and 4-Bu Tubes	Same Price as 4 and 6-Lb. Cones
2-Lb. Twist Tubes	.01 Less Than 4 & 6-Lb. Twist Tubes on 120, 200 and 300 Denier Intermediate Twist

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

Celaperm Filament Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.37	$1.38	$1.31	$1.32
75/20	1.34	1.35	1.28	1.29
100/26	1.28	1.29	1.22	1.23
120/40	1.19	1.20	1.13	1.14
150/40	1.11	1.12	1.06	1.07
200/52	1.05	1.06	1.01	1.02
300/80	1.01	1.02	.97	.98
450/120	.99	1.00	.95	.96
600/160	.97	.98	....	....
900/80	.94	....	....	....

3 to 5 Turns on Cones or Beams — $.02 Additional

John T. McHugh has been named assistant vice president of Meinhard Western, Inc.

George B. Fenton of the Duplan Corp. has been elected Chairman of the Throwsters Group of the National Federation of Textiles, Inc.

Henry A. Truslow, president of Ponemah Mills, has been elected president of Northern Textile Association.

E. F. Hayes has been elected executive vice president of Riggs & Lombard, Inc. with headquarters at Lowell, Mass.

Irving S. Bull has joined Roberts Co. as research engineer.

Eugene Thompson has been appointed general sales representative for the Chicago branch office of Stein Hall & Co.

V. Paul Riordan has joined the textile fibers department of Union Carbide Chemicals Co., Division of Union Carbide Corp., as a technical representative for Dynel textile fiber. In the same division, **Roger A. Lewis** has become group leader, new fiber sales development; **Richard S. Brissette,** group leader, Dynel sales development; **Frederick C. King,** sales planning coordinator, fibers department.

Herbert S. Morrow, former executive of American Cyanamid Co., and in recent years a consultant to Cyanamid's Fibers and Organic Chemicals Division has retired from activity in the chemical industry.

William C. King has resigned as executive vice president of The Felters Company. He will continue to serve on the board of directors but will not be actively associated with the company.

Robert F. Holoch has retired from his post as dyestuff salesman in the New York area for the National Aniline Division of Allied Chemical & Dye Corp.

Deaths

J. Hillman Zahn, retired manager of the Southern office of H. W. Butterworth & Sons Co., died recently at the age of 64.

G. Harry Hill, New England Sales Manager for Steel Heddle Manufacturing Co., died early in October.

Frederick Charles Scholler, founder and board chairman of Scholler Brothers, Inc. died in October at the age of 71.

William Menke, retired president of Menke, Kaufman & Co. and long prominently connected with the National Federation of Textiles, died last month at 82.

Celaperm Black Yarn Prices

Effective March 11, 1955

Denier and 4 & 6-Lb.

Filaments	Intermediate Twist Cones	Intermediate Twist Beams	Spinning Twist Cones	Spinning Twist Beams
55/15	$1.17	$1.18	$1.11	$1.12
75/20	1.14	1.15	1.08	1.09
100/26	1.08	1.09	1.02	1.03
120/40	.99	1.00	.93	.94
150/40	.91	.92	.86	.87
200/52	.85	.86	.81	.82
300/80	.81	.82	.77	.78
450/120	.79	.80	.75	.76
600/160	.77	.78	....	....
900/80	.74	....	....	....

3 to 5 Turns on Cones or Beams — $.02 Additional

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Acetate

Denier & Filament	Zero Twist Tubes	Zero Twist Beams	Low Twist Cones	Low Twist Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	Intermediate Twist 4 & 6 Lb. Tw. Tbs.	Intermediate Twist Cones	Intermediate Twist Bms.
45-13	$1.03	$1.11		$1.12			$1.17	$1.18
55-18	.925	.985		.99			1.04	1.05
55-24	.925	.985		.99			1.04	1.05
75-24	.84	.94		.95		$.98	1.00	1.01
75-50				.97		1.00	1.02	1.03
100-32	.81	.89		.90		.93	.95	.96
120-50	.77	.80		.81		.85	.86	.87
150-40	.69	.72	.72	.73	.77	.77	.77	.78
200-60	.68		.69	.70	.73	.73	.73	.74
240-80			.67				.71	
300-80	.63	.65	.65	.66	.69	.69	.69	.70
450-120	.63		.63	.64	.67	.67	.67	.68
600-160			.62	.63	.65	.65	.65	.66
900-44	.61				.63	.63	.63	.64
900-240					.63	.63	.63	.64
1800-88					.61	.61	.61	.62
2700-132					.61	.61	.61	.62
3000-210					.61	.61	.61	.62

(A) Regular Twist (2.9 and 5 T.P.I.)—add $.02 to Intermediate Twist Price.

(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.

Color-Sealed

Denier & Filament	Zero Twist Tubes	Zero Twist Beams	Low Twist Cones	Low Twist Beams	Intermediate Twist Twisted Tubes 2 Lb.	4 & 6 Lb.	Cones	Beams
55-18	$1.245	$1.315		$1.32	$1.35	$1.35	$1.37	$1.38
75-24	1.18	1.28		1.29	1.32	1.32	1.34	1.35
100-32	1.14			1.23	1.26	1.26	1.28	1.29
150-40	1.03	1.06	1.06	1.07	1.10	1.11	1.11	1.12
200-60	1.00		1.01	1.02	1.04	1.05	1.05	1.06
300-80	.95	.97	.97	.98	1.00	1.01	1.01	1.02

(A) Regular Twist—Add $.02 to Intermediate Twist Price.

Black

Denier & Filament	Zero Twist Tubes	Zero Twist Beams	Low Twist Cones	Low Twist Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	4 & 6 Lb. Tw. Tbs.	Cones	Beams
55-18	$1.045	$1.115		$1.12		$1.15	$1.17	$1.18
75-24	.98	1.08		1.09		1.12	1.14	1.15
100-32	.94			1.03		1.06	1.08	1.09
150-40	.83	.86	.86	.87		.91	.91	.92
200-60	.80		.81	.82		.85	.85	.86
300-80	.75	.77	.77	.78	.81	.81	.81	.82
450-120			.75	.76	.79	.79	.79	.80
600-160			.73	.74	.77	.77	.77	.78
900-240			.73	.74	.74	.74	.74	.75

(A) Regular Twist (2.9 and 5 T.P.I.)—add $.02 to Int. Twist Price.

(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.

Specialty Yarns

Type 20	Same Price as Regular Yarn
Type C	Same Price as Regular Yarn

Thick & Thin

Denier & Filament	Natural Cones	Natural Beams	Black Cones	Black Beams	Color-Sealed Cones	Color-Sealed Beams
200-64 Int. Twist	1.05		$1.15		$1.35	
200-64 Reg. Twist	1.08	$1.09	1.17	$1.21		

Terms: Net 30 days. Subject to change without notice.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective December 21, 1956

"Estron"* Yarn, Bright or Dull — White

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Intermediate Twist Tubes	Intermediate Twist Beams	Low Twist Cones	Low Twist Beams	Zero Twist Tubes	Tricot Beams Spun Twist	Tricot Beams Zero Twist
55/13	$1.06	$1.04	$1.02	$1.05	$.98	$.99	$.92½	$.99	$.98½
75/19	1.02	1.00	.98	1.01	.94	.95	.84	.95	....
75/49	1.04	1.02	....	1.03	....	....	....	....	....
100/25	.97	.95	.93	.96	.89	.90	.81	....	....
120/30	.88	.86	.84	.87	.80	.81	....	....	....
150/38	.79	.77	....	.78	.72	.73	.69	....	....
200/50	.75	.73	....	.74	.69	.70	....	....	....
300/75	.71	.69	....	.70	.65	.66	.63	....	....
450/114	.69	.67	....	.68	.63	.64	....	....	....
600/156	.67	.65	....	.66	.62	.63	.63	....	....
900/230	.65	.63	....	.64	....	....	.61	....	....
Heavier	....	....	....	....	....	....	.56	....	....

Current Prices—December 19, 1955

"Chromspun"*—Standard Colors (Except Black)

Denier & Filament	Regular Twist Cones	Regular Twist Beams	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist Cones	Low Twist Beams
55/13	$1.39	$1.40	$1.37	$1.38	$1.31	$1.32
75/19	1.36	1.37	1.34	1.35	1.28	1.29
100/25	1.30	1.31	1.28	1.29	1.22	1.23
150/38	....	....	1.11	1.12	1.06	1.07
300/75	....	....	1.01	1.02	.97	.98
450/114	....	....	.99	1.00	.95	.96
900/230	....	....	.94	.95	....	....

Current Prices

"Chromspun"*—Black

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Intermediate Twist Beams	Low Twist & Spun Twist Beams
55/13	$1.19	$1.17	$1.18	$1.12
75/19	1.16	1.14	1.15	1.09
100/25	1.10	1.08	1.09	1.03
150/38	.93	.91	.92	.87
200/50	.87	.85	.86	.82
300/75	.83	.81	.82	.78
450/114	.81	.79	.80	.76
900/230	.76	.74	.75	....

Prices are subject to change without notice.

Prices on special items quoted on request.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of Mississippi River. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Estron" and "Chromspun" are trade-marks of the Eastman Kodak Co.

RAYON STAPLE and TOW

American Viscose Corp.

Current Prices

Rayon Staple

	Bright and Dull
Regular	$ .31
Extra Strength	
1.0 Denier	.34
"Viscose 32A"	.36
"Avisco Crimped"	
1.25 Denier	.34
3.0 & 5.5 Deniers	.32
8.0 & 15.0 Deniers	.34
"Avisco Super L"	
8.0, 15.0 & 22.0 Deniers	.35
Short Staple Blend	.33

Rayon Tow

Grouped Continuous Filaments (200,000 Total Denier)	
1.5, 3.0 & 5.5 Denier Per Filament	.32
9.0 Denier Per Filament	.34
Grouped Continuous Filaments (4400/300 & 2000/1500)	.65

Prices of other descriptions on request.

Terms: Net 30 days.

Celanese Corp. of America

Current Prices

Rayon Tow

	Bright & Dull
1.5, 3, 5 D.P.F.	.32
8 D.P.F.	.34

Courtaulds (Alabama) Inc.

Effective August 22, 1957

Rayon Staple

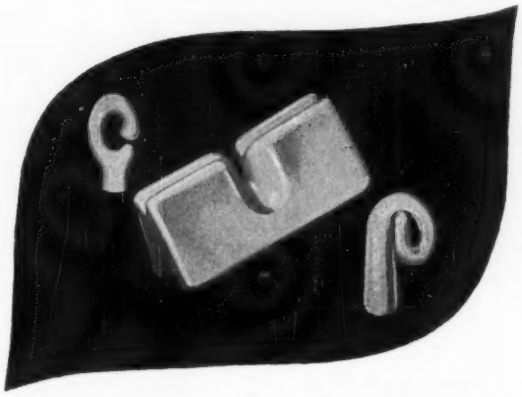
	Bright	Dull
1½ and 3 denier	$.31	$.31
Available in 1½", 1-9/16" and 2".		

Crimped Rayon Staple

3 and 5½ denier	$.32	$.32
Available in 1-9/16" and 3".		
3 denier		.32
Available in 2".		

9/11/57

The opposite of the best is not the worst but 'good enough'.



We who are responsible for the high quality of

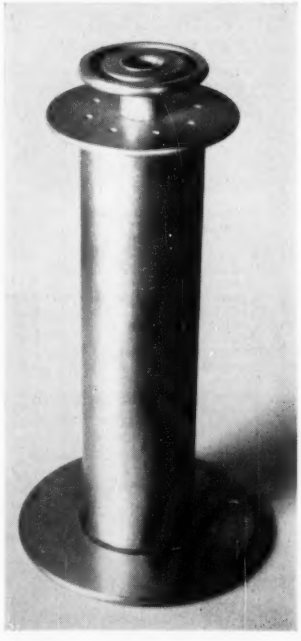
LAMBERTVILLE THREAD GUIDES

know that only painstaking care in every step in the manufacturing process, together with the most modern ceramic processing equipment and methods will assure our customers of the very best guides money can buy—guides that are hard, durable and accurate. That's good business for you—and us. Why not ask us for samples and quotations on your next guide order.

LAMBERTVILLE CERAMIC

AND MANUFACTURING COMPANY
LAMBERTVILLE **NEW JERSEY**

N E W



LOW COST ALUMINUM TWISTER BOBBIN

New aluminum twister bobbin of high strength will not warp or fail despite repeated steamings of highest strength nylon yarns. Of two pound capacity, this new bobbin is dynamically balanced and anodized against corrosion yet is less costly than ordinary bobbins. Spindle guide tube goes all the way through. Grip knob with identification ring simplifies handling without need to touch yarn. Available in a variety of sizes. Write for details today.

BW MACK **ALLENTOWN BOBBIN WORKS, INC.**
ALLENTOWN **PENNSYLVANIA**

What powder does for her nose, TITANOX* does for her clothes...

. . . eliminates the sheen—so she's slick, not shiny.

The pleasing surface of today's synthetic-fiber fabrics represents TITANOX titanium dioxide pigments in action, *permanently* delustering all synthetic fibers.

TITANOX titanium dioxides have the fine particle size and high refraction that reduce surface luster.

Our Technical Service Department can help you select the best type of TiO_2 for your product. Titanium Pigment Corporation, 111 Broadway, New York 6, N. Y.; Atlanta 5; Boston 6; Chicago 3; Cleveland 15; Houston 2; Los Angeles 22; Philadelphia 3; Pittsburgh 12; Portland 14, Ore.; San Francisco 7. In Canada: Canadian Titanium Pigments Limited, Montreal 2; Toronto 1; Vancouver 2.

TITANIUM PIGMENT CORPORATION
***subsidiary of* National Lead Company**

*TITANOX is a registered trademark for the full line of titanium pigments offered by Titanium Pigment Corporation.

4901

"Coloray" Spun Dyed Rayon Staple

	1½ Den. 1-1/16"	3 Den. 2"	4½ Den. 6"	Price per Lb.
	(Code numbers for color and denier)			
Black	1404	1419	1425	37¢
Tan	8004	8019	8025	39¢
Medium Brown	8804	8819	8825	39¢
Silver Grey	1004	1019	1025	39¢
Mocha	7704	7719	7725	39¢
Dark Brown	8604	8619	8625	40¢
Ecru	7904	7919	7925	40¢
Slate Grey	0804	0819	0825	43¢
Light Blue	4004	4019	4025	44¢
Sulphur	2004	2019	2025	44¢
Nugget	2304	2319	2325	44¢
Apple Green	5104	5119	5125	45¢
Aqua	4704	4719	4725	45¢
Rose	5804	5819	5825	45¢
Sage	5304	5319	5325	45¢
Crystal Blue	3904	3919	3925	45¢
Peacock Blue	4604	4619	4625	46¢
Medium Blue	4204	4219	4225	48¢
Dark Blue	4404	4419	4425	49¢
Hunter Green	5404	5419	5425	49¢
Indian Yellow	2504	2519	2525	49¢
Pink	6004	6019	6025	50¢
Dawn Pink	5904	5919	5925	50¢
Turquoise	4804	4819	4825	50¢
Malachite Green	5204	5219	5225	51¢
Red	7004	7019	7025	56¢

(In addition to the above, Black is also available in:
1-12 den. 1⅛" (1401) 3 den. 1-9/16" (1416) 4½ den. 2" (1423)
3 den. 1⅛" (1413) 3 den. 2½" (1420) 4½ den. 6" (1425)

Terms: Net 30 days, f.o.b. LeMoyne, Alabama. Minimum transportation allowed to points in U.S.A. east of Mississippi River.

The Hartford Rayon Co.

Div. Bigelow-Sanford Carpet Co., Inc.

Rayon Staple

Effective February 8, 1956

REGULAR

1.5 denier Bright	
1½"	.31
5½ denier Bright	
1½", 3" and 4½"	.32

VISCALON 66 (Crimped)

8 denier 3" Bright	.34
15 denier 3" Bright	.34
15 denier 3" Dull	.34

"KOLORBON"—Solution Dyed Rayon Staple—3" and 6"

	8 Denier Bright	15 Denier Dull	15 Denier Bright
Cloud Grey	45¢	45¢	....
Sandalwood	45¢	45¢	....
Nutria	45¢	45¢	....
Sea Green	45¢	45¢	....
Mint Green	45¢	45¢	....
Champagne	45¢	45¢	....
Cafe Brown	55¢	....	55¢
Midnight Black	45¢	....	45¢
Gold	48¢	48¢	....
Turquoise	45¢	45¢	....
Melon	48¢	48¢	....
Capri Blue	45¢	45¢	....
Charcoal Grey	45¢	45¢	....
Coco	46¢	46¢	....
Sable	47¢	....	47¢
Tangerine	58¢	....	58¢
Chinese Red	59¢	....	59¢
Larkspur Blue	45¢	45¢	....
Royal Blue	55¢	....	55¢
Lemon Peel	46¢	46¢	46¢
Kelly Green	46¢	46¢	46¢
Bitter Green	55¢	....	55¢

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

ACETATE STAPLE and TOW

Celanese Corp. of America

Current Prices

Staple

Celanese Acetate Staple	Bright & Dull
3, 5.5 & 8 Denier (Regular Crimp or High Crimp)	$.34
2, 12 & 17 Denier (Regular Crimp or High Crimp)	.35
35 Denier	.38
50 Denier	.40
Type F — 5.5, 8, 12, 17 Denier	.35
Type K — (Available under Celanese License Agreement)	.39
⅝" to ⅞" length (All Deniers)	.03 (premium)
Variable Acetate Fiber	.32
35 Denier Flat Filament Acetate	.40
Non-Textile Acetate Fibers	.27*

Tow (Celatow)

3, 5.5 & 8 Denier	$.36
2, 12 & 17 Denier	.37
35 Denier	.40
50 Denier	.42

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A. east of the Mississippi River. Shipments west of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.

All previous prices withdrawn.

* No transportation allowed (F.O.B. shipping point).

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

NON CELLULOSIC YARN

NYLON

Allied Chemical and Dye Corporation

Caprolan®†

Effective April 15, 1957

Denier	Filament	Turn/In.	Twist	Type**	Package	1st Grade Price/Lb	2nd Grade Price/Lb
560	32	1	Z	HB	Aluminum Tube	1.39	1.29
840	136	½	Z	HBT	Aluminum Tube	1.30	1.20
840	136	½	Z	HBT	Beams	1.30	1.20
Heavy Yarn						Price/Lb.	
2100	408	0	O	HB	Paper Tube*	$1.27	
2100	112	0	O	HB	Paper Tube*	1.30	
2500	408	0	O	HB	Paper Tube*	1.27	
3360	544	0	O	HB	Paper Tube*	1.26	
4200	680	0	O	HB	Paper Tube*	1.26	
4200	224	0	O	HB	Paper Tube*	1.29	
5000	816	0	O	HB	Paper Tube*	1.25	
5000	280	0	O	HB	Paper Tube*	1.28	
5800	952	0	O	HB	Paper Tube*	1.25	
7500	1224	0	O	HB	Paper Tube*	1.24	
10000	1632	0	O	HB	Paper Tube*	1.24	
15000	2448	0	O	HB	Paper Tube*	1.23	

Terms—Net 30 days.

Prices subject to change without notice.

All prices quoted F.O.B. Shipping Point.

Following are invoiced as a separate item.

Bobbins—45 cents each.

Aluminum Tubes—40 cents each.

Beams—$220.00 each.

Cradles for Beams—$53.00.

B—Bright.

H—High Tenacity.

T—Heat Stabilized.

* Paper Tubes non-returnable, no charge.

** Type is used to describe luster and tenacity

Lowest freight cost prepaid or allowed east of Mississippi River, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

† Allied Chemical's polyamide fiber.

American Enka Corporation

Nylenka Filament Yarn Prices

Effective June 1, 1957

Denier & Filament	Twist	Luster	Tenacity	Package	Yarn Weight per Package	Price per Pound, Std.	Price per Pound, Sub.
15/1	0.5Z	Semi-dull	Normal	Pirn	1 lb.	$5.25	$5.00
15/2	0.5Z	Semi-dull	Normal	Pirn	1 lb.	5.50	5.25
15/1	0.5Z	Dull	Normal	Pirn	1 lb.	5.30	5.05
20/2	0.5Z	Semi-dull	Normal	Pirn	1 lb.	4.60	4.30
30/6	0.5Z	Semi-dull	Normal	Pirn	2 lb.	2.36	2.21
40/8	0.5Z	Semi-dull	Normal	Pirn	2 lb.	2.01	1.81
50/13	0.5Z	Semi-dull	Normal	Pirn	2 lb.	1.91	1.76
200/16	0.9Z	Bright	Normal	Cone	4 lb.	1.49	1.44
200/16	0.5Z	Bright	Normal	Beam	....	1.54	....
200/34	0.9Z	Bright	Normal	Cone	4 lb.	1.49	1.44
200/34	0.5Z	Bright	Normal	Beam	....	1.54	....

Pirns charged at $.25 or $.45 each, depending upon type. Deposit refunded upon return of pirn in good condition. Cones are non-returnable. Beams and cradles are deposit carriers and remain property of American Enka Corporation.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

The Chemstrand Corp.

Current Prices

Effective December 19, 1956

Denier	Filament	Twist	Type*	Package	Standard	Second
10	1	O	SD	Bobbins	$8.42	$7.81
15	1	O	SD	Bobbins	5.25	5.00
15	1	O	D	Bobbins	5.30	5.00
15	1	O	D	Spools	5.41	....
30	10	Z	SD	Bobbins	2.36	2.21
30	10	Z	HSD	Bobbins	2.36	2.21
30	26	Z	SD	Bobbins	2.49	2.21
40	7	Z	SD	Bobbins	2.11	1.81
40	13	Z	SD	Bobbins	2.01	1.81
40	13	Z	SD	Spools	2.11	....
40	13	Z	D	Bobbins	2.06	1.81
40	13	Z	D	Spools	2.16	....
50	17	Z	SD	Bobbins	1.91	1.76
70	34	Z	SD	Bobbins	1.71	1.66
70	34	Z	B	Bobbins	1.71	1.66
70	34	Z	D	Spools	1.86	....
80	26	Z	SD	Bobbins	1.71	1.56
100	34	Z	SD	Bobbins	1.65	1.60
100	34	Z	HB	Bobbins	1.70	1.60
140	68	Z	SD	Bobbins	1.60	1.55
200	34	Z	B	Bobbins	1.49	1.44
200	68	Z	SD	Bobbins	1.56	1.46
210	34	Z	HB	Bobbins	1.49	1.44
210	34	Z	HB	Spools	1.54	....
210	34	Z	HB	Beams	1.54	....
260	17	Z	HB	Bobbins	1.49	1.39
260	17	Z	HB	Spools	1.54	....
420	68	Z	HB	Bobbins	1.39	1.29
630	102	Z	HB	Bobbins	1.39	1.29
840	136	Z	HB	Tubes	1.34	1.24
840	140	Z	HB	Beams	1.30	1.20
840	140	Z	HB	Tubes	1.30	1.20

*Types: D—Dull; SD Semi-dull; B—Bright; H—High tenacity.

Bobbins are invoiced at 25¢ or 45¢ each, depending on type; tubes are invoiced at 40¢ each; spools invoiced at $77.00 and $95.00 depending on type; and beams and crates for beams are invoiced at $220 and $25 respectively.

Prices subject to change without notice.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
7-1	0	200	Bobbin	$9.47	$8.82
10-1	0	200	Bobbin	8.42	7.82
12-1	0	200	Bobbin	7.35	6.85
15-1	0	200	Tricot Bms.	5.36	....
15-1	0	200	Bobbin	5.25	5.00
15-1	0	680	Tricot Bms.	5.41	....
15-1	0	680	Bobbin	5.30	5.00
20-1	0	200	Bobbin	4.42	4.12
20-7	0.5Z	200	Bobbin	2.91	2.61
20-7	0.5Z	200	Tricot Bms.	3.02	....
20-7	0.5Z	680	Bobbin	2.96	2.61
20-7	0.5Z	680	Tricot Bms.	3.07	....
20-20	0.7Z	209	Bobbin	6.00	....
30-10	0.5Z	200	Bobbin	2.36	2.21
30-10	0.5Z	200	Tricot Bms.	2.46	....
30-10	0.5Z	680	Bobbin	2.41	2.21
30-10	0.5Z	680	Tricot Bms.	2.51	....
30-26	0.5Z	200	Bobbin	2.49	2.21
40-7	0.5Z	200	Bobbin	2.11	1.81
40-13	0.5Z	200	Bobbin	2.01	1.81
40-13	0.5Z	200	Tricot Bms.	2.11	....
40-13	0.5Z	400	Bobbin	2.13	1.90
40-13	0.5Z	680	Bobbin	2.06	1.81
40-13	0.5Z	680	Tricot Bms.	2.16	....
40-34	0.5Z	200	Bobbin	2.21	1.81
50-10	0.5Z	200	Bobbins	2.11	1.76
50-17	0.5Z	200	Bobbin	1.91	1.76
50-17	0	200	Tubes	1.91	1.76
50-17	0.5Z	680	Bobbin	2.01	1.76
70-17	0.5Z	200	Bobbin	1.71	1.66
70-34	0	100	Tubes	1.71	1.66
70-34	0.5Z	100/200	Bobbin	1.71	1.66
70-34	0	200	Tubes	1.71	1.66
70-34	0.5Z	300	Bobbin	1.76	1.66
70-34	0.5Z	680	Bobbin	1.76	1.66
80-26	0.5Z	200	Bobbin	1.71	1.56
90-44	0.5Z	200	Bobbin	1.86	1.76
100-34	0.5Z	200	Bobbin	1.65	1.60
100-34	0.5Z	300	Bobbin	1.70	1.60
100-34	0	300	Tubes	1.70	1.60
100-34	0.5Z	680	Bobbin	1.70	1.60
100-50	0.5Z	200	Bobbin	1.71	1.60
140-68	0	200	Tubes	1.60	1.55
140-68	0.5Z	200	Bobbin	1.60	1.55
140-68	0.5Z	300	Bobbin	1.65	1.55
200-34	0	100	Tubes	1.49	1.44
200-34	0.7Z	100	Bobbin	1.49	1.44
200-34	0.7Z	680	Bobbin	1.54	1.44
200-68	0.7Z	200	Bobbin	1.56	1.46
210-34	0	300	Tubes	1.49	1.44
210-34	0.7Z	300	Bobbin	1.49	1.44
210-34	0.7Z	300	Beam	1.54	....
210-34	0.7Z	330	Bobbin	1.59	1.44
260-17	1Z	300	Bobbin	1.49	1.39
400-68	0.7Z	100	Bobbin	1.39	1.29
420-68	1Z	300	Bobbin	1.39	1.29
780-51	1Z	300	Bobbin	1.39	1.29
800-140	0.5Z	100	Bobbin	1.39	1.29
840-140	0.5Z	300/700	Al. Tbs/Beam	1.30	1.20

Color-Sealed Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
30-10	0.5Z	140	Bobbin	$2.71	$2.56
40-13	0.5Z	140	Bobbin	2.36	2.16
70-34	0.5Z	140	Bobbin	2.06	2.01
100-34	0.5Z	140	Bobbin	2.00	1.75
100-34	0	140	Tubes	2.00	1.95
200-34	0.7Z	140	Bobbin	1.84	1.79
260-17	1Z	140	Bobbin	1.84	1.79

Industrial Yarn				Price/Lb.
2520-420	0	300/700	Paper Tube	$1.27
4200-700	0	300/700	Paper Tube	1.25
5040-840	0	300/700	Paper Tube	1.25
7560-1260	0	300/700	Paper Tube	1.24
10080-1680	0	300/700	Paper Tube	1.24
15120-2520	0	300/700	Paper Tube	1.23

These prices are subject to change without notice. Terms: Net 30 Days.

Types

Type 100—Bright, normal tenacity.
Type 140—Bright, color-sealed, black, normal tenacity.
Type 200—Semidull, normal tenacity.
Type 209—Semidull, normal tenacity.
Type 300—Bright, high tenacity.
Type 330—Bright, high tenacity, more heat & light resistant.
Type 400—Semidull, high tenacity.
Type 680—Dull, normal tenacity.
Type 700—Bright, high tenacity.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Following are invoiced as a separate item.
Bobbins—25 cents or 45 cents depending on type
Aluminum Tube—40¢ each
Draw Winder Tubes—$.70 or $1.00 depending on type
Tire Cord Beams—$220.00 each
Cradles for Tire Cord Beams—$115.00 each
Tricot Beams—$95.00 each
Cradles for Tricot Beams—$130.00 each
(Beams and Cradles are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

POLYESTER E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"*

Denier & Filament	Turns/Inch	Luster	Type*	Tubes 1st Gr.
30-14	0	Bright	55	$2.81
40-27	0	Semidull	56	2.41
40-27	0	Bright	55	2.41
40-27	0	Dull	57	2.46
70-34	0	Semidull	56	2.01
70-14	0	Bright	55	2.01
70-34	0	Bright	55	2.01
70-34	0	Dull	57	2.06
100-34	0	Semidull	56	1.94
140-28	0	Bright	55	1.89
150-34	0	Semidull	56	1.91
220-50	0	Bright	51	1.84
250-50	0	Bright	55	1.86
1100-250	0	Semidull	59	1.50
1100-250	0	Bright	51	1.50

Terms: Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Yarn Types

* Type:
Type 51—Bright, high tenacity.
Type 55—Bright, normal tenacity.
Type 56—Semidull, normal tenacity.
Type 57—Dull, normal tenacity.
Type 59—Semidull, high tenacity.

Tubes are invoiced as a separate item at $.70 each.
All tubes are returnable for credit.
* "DACRON" is DuPont's registered trade-mark for its polyester fiber.

SARAN FIBERS

The Saran Yarns Company — Odenton, Maryland

The Hall Company (Selling Agent)
41 East 42 Street, New York 17, N. Y. (Oxford 7-8996)

Current Prices:

CONTINUOUS FILAMENT

Type	Twist p. i.	Natural	Colors
1240/10	3	$1.32	$1.37
750/20**	3	1.75	1.80

** For filter fabrics and other industrial purposes only.
All Saran cut staple is curled.
F.O.B. Odenton, Maryland.
Terms: Net 30 days.

NON CELLULOSIC STAPLE & TOW

ACRYLIC

The Chemstrand Corp.

Current Prices

"Acrilan"

Effective October 1, 1957

	Regular Acrilan	Acrilan 16
2.0 denier Semi-Dul and Bright staple & tow	$1.24	$1.24
2.5 denier Hi-Bulk Bright and Semi-dull staple and tow	1.16	1.16
3.0 denier Bright & Semi-dull staple & tow	1.16	1.16
5.0 denier Bright & Semi-dull staple & tow	1.16	1.16
8.0 denier Bright & Semi-dull staple	1.16	1.16
15.0 denier Bright & Semi-dull staple	1.01	1.05

Terms: Net 30 days. Freight prepaid to points east of the Mississippi River.

Union Carbide Chemicals Co.

Div. Union Carbide Corp.
Textile Fibers Dept.
Effective October 1, 1957

Dynel Staple & Tow

Natural Dynel	
3, 6, and 12 Denier, Staple and Tow	$1.10 per lb.
24 Denier, Staple and Tow	1.05 per lb.
Dynel Spun with Light Colors: Whitened, Blond, or Gray	
3, 6, and 24 Denier, Staple and Tow	1.30 per lb.
Dynel Spun with Dark Colors: Black, Charcoal, and Brown	
3, 6, and 24 Denier, Staple and Tow	1.40 per lb.
Dynel Type 63 Bulking Fiber (3 Denier only)	Add $.05 per lb. to above prices

Prices are quoted f.o.b. South Charleston, W. Va.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Orlon"** Acrylic Staple & Tow

Type 42	1st Grade
1.0 Denier Semidull & Bright—Staple only	$1.48
2.0 Denier Semidull & Bright	1.33
3.0 Denier Semidull & Bright	1.28
3.0 Denier Semidull Color-sealed Black	1.63
6.0 Denier Semidull & Bright	1.20
6.0 Denier Color-sealed Black	1.55
4.5 Denier Semidull	1.20
10.0 Denier Semidull	1.20

Tow—Total Denier 470,000
Staple Lengths—1½", 2", 2½", 3", 4½"
High Shrinkage Staple same price as Regular Staple

Type 39 $1.06
This product is designed for *woolen system spinning* and is a blend of deniers (average 4.2) with a variable cut length.

Type 39A $1.14
This product is designed for *woolen system spinning* and is a blend of predominately fine deniers (average 2.4) with a variable cut length.

Mill Tests

(Continued from Page 69)

the thickness of the yardstick and the slight contraction occurring in a folded cloth, as against a flattened out piece.

Because of varying contraction, depending upon different cloth styles and finishes, the standard for each cloth style or finish is set indirectly. For this purpose, a carefully determined and clocked yardage is run through the folder repeatedly, until the folder has been adjusted to give exactly the number of folds corresponding to the clocked yards. Then the corresponding inch length of each fold, as measured by the yardstick is adopted as the testing standard.

Where the measured inches do not conform to standard, a recheck of the folder settings is indicated.

Type 39B $1.01

This product is designed for *woolen system spinning* and is a blend of predominately heavy deniers (average 6.5) with a variable cut length.

F.O.B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Terms: Net 30 Days.

** "ORLON" is DuPont's registered trade-mark for its acrylic fiber.

Eastman Chemical Products, Inc.
Tennessee Eastman Co.

Effective November 15, 1956

"Verel"*

Deniers	Dull and Bright
2, 3, 5 and 8	$1.10 per pound

Prices are subject to change without notice.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of the Mississippi River. Seller reserves the right to select route and method of shipment. If buyer requests and seller agrees to a route or method involving higher than lowest rate buyer shall pay the excess of transportation cost and tax.

* "Verel" is a trade-mark of the Eastman Kodak Co.

NYLON

American Enka Corp.

Nylenka (Nylon Six Staple)

Denier	Luster	Length (Inches)	Price per pound
3	semi-dull	1⅛, 1½, 2, 2⅝, 3, 4½	$1.28
6	bright	3, 4½	1.28
8	bright	2⅝	1.20
10	bright	3	1.20
15	bright	3	1.20
15	semi-dull	3	1.20

Deniers and lengths of staple not listed above are available upon special request.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Staple and Tow

Denier	Type	Staple Lengths	Tow Bundle	1st. Grade Price/Lb.	2nd Grade Staple Only
1.5	200	1⅛"—4½"	None made	$1.33	$1.18
1.5	201	1⅛"—4½"	None made	1.35	1.20
3.0	100/200	1⅛"—4½"	430M	1.28	1.13
3.0	101/201	1⅛"—4½"	455M	1.30	1.15
6.0	100	1⅛"—4½"	330M	1.28	1.13
6.0	101	1⅛"—4½"	345M	1.30	1.15
15.0	100	1½"—6½"	330M	1.20	1.05
15.0	101	1½"—6½"	None made	1.22	1.07
15.0	600	1½"—6½"	330M	1.22	1.07
15.0	601	1½"—6½"	345M	1.24	1.09

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows:

1⅛, 1½, 2, 2½, 3, 4½ and 6½

Types

Type 100 Bright, normal tenacity, not heatset.
Type 101 Bright, normal tenacity, heatset.
Type 200 Semidull, normal tenacity, not heatset.
Type 201 Semidull, normal tenacity, heatset
Type 600 Dull normal tenacity, not heatset.
Type 601 Dull normal tenacity, heatset.

These prices are subject to changes without notice.

Terms—Net 30 Days.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Industrial Rayon Corp.

Effective November 29, 1956

Nylon Staple

1.5 denier	$1.33 per lb.
2, 3 and 6 denier	1.28 per lb.
8 and 15 denier	1.20 per lb.

Bright and semi-dull, required length.

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River.

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"* Staple and Tow

Denier	Luster	Type	Length	Tow Bundle	1st Gr.
1.25	Semidull	54	1¼"-3"	...	$1.56
1.5	Semidull	54	1¼"-3"	...	1.51
3.0	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41
4.5	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41
6.0	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41

Terms: Net 30 Days.

F. O. B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

POLYVINYL ACETATE

American Viscose Corp.

Effective October 1, 1956

"Vinyon"® Staple

3.0 denier	½" unopened	$.80 per lb.
3.0 "	1¼" unopened	.80 per lb.
3.0 "	1¼" opened	.90 per lb.
3.0 "	2" opened	.90 per lb.
3.0 "	2" unopened	.80 per lb.
5.5 "	1" opened	.90 per lb.
5.5 "	3½" opened	.90 per lb.
5.5 "	3½" unopened	.80 per lb.

Terms: Net 30 days.

PROTEIN

Virginia-Carolina Chemical Corp.

Fiber Division

Effective January 15, 1951

"Vicara" Staple

	Standard Crimp	Highly Crimped
3 Denier	$1.00 per lb.	$1.05 per lb.
5 Denier	1.00 per lb.	1.05 per lb.
7 Denier	1.00 per lb.	1.05 per lb.

Bleached "Vicara" Staple

	Standard Crimp	Highly Crimped
3 Denier	$1.10 per lb.	$1.15 per lb.
5 Denier	1.10 per lb.	1.15 per lb.
7 Denier	1.10 per lb.	1.15 per lb.

Staple length ½ to 6 in.

Supplied in staple lengths or as continuous tow (270,000 filaments).

Terms: Net 30 days.

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Lofted Chromspun Carpeting

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Dull-Luster Carpet Nylon

Du Pont has brought out a full dull-luster nylon carpet stable fiber to meet the demand in the floor covering industry for such a staple to broaden styling possibilities for nylon carpeting. The firm said the new fiber has a high degree of dye lightfastness and resistance to wear. Price of the new staple is $1.22 a pound for non-heat set, and $1.24 for heat set. Sufficient poundage is available, Du Pont reports, to meet sampling requirements. *For further information write the editors.*

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Calendar of Coming Events

Dec. 4—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
Dec. 5—AATT Appalachian Group meeting. Franklin Club, Elizabethton, Tenn.
Dec. 5—AATCC Rhode Island Section, annual meeting. Providence, R. I.
Dec. 6—AATCC Delaware Valley Section, meeting. Kugler's Restaurant, Philadelphia, Pa.
Dec. 6—AATCC Northern New England Section, annual meeting. Hotel Continental, Cambridge, Mass.
Dec. 7—AATCC Southeastern Section meeting. Dinkler Plaza Hotel, Atlanta, Ga.
Dec. 13—AATCC Western New England Section meeting. Rapp's Restaurant, Shelton, Conn.

1958

Jan. 8—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
Jan. 30-Feb. 1—American Society for Quality Control, Textile Div., Eighth Annual Conference. Clemson House, Clemson, S. C.
Feb. 5—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
Feb. 12-14—1958 Cotton Research Clinic. Pinehurst, N. C.
Mar. 5—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
Mar. 6-7—Textile Quality Control Association spring meeting. Poinsett Hotel, Greenville, S. C.
Mar. 18-21—A.S.T.M. Committee D-13 spring meeting. Sheraton Park Hotel, Washington, D. C.

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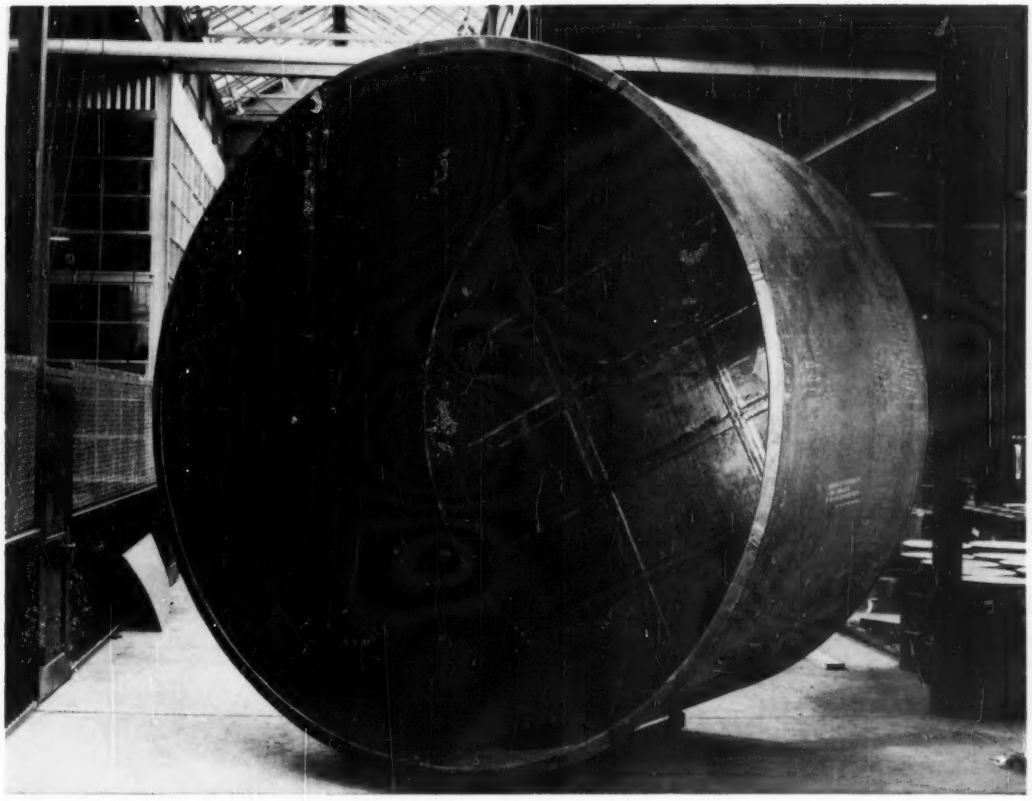

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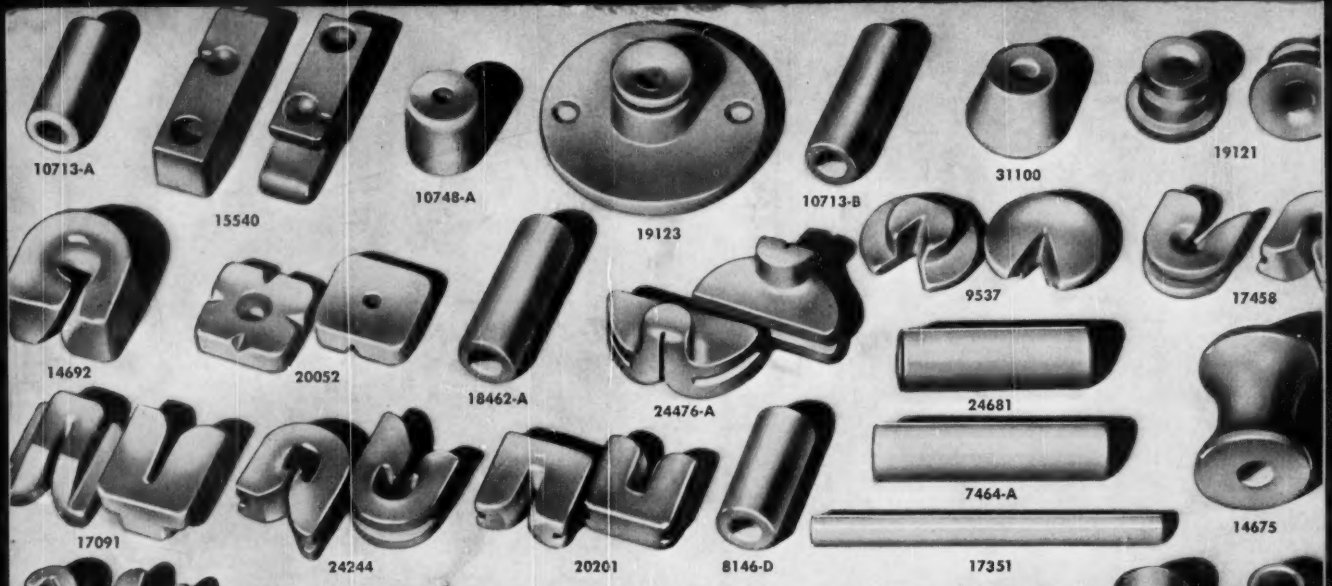

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